# Waterbodies Unit
# Human Health Risk Assessment
# Gibbsboro, Voorhees, and Lindenwold, New Jersey

## Administrative Order Index No. II CERCLA-02-99-2035

Prepared for
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# *Abbreviations*

| | |
|---|---|
| °F | Degree Fahrenheit |
| µg | Microgram |
| | |
| ADAF | Age-dependent Adjustment Factor |
| ALM | Adult Lead Model |
| AOC | Administrative Order on Consent |
| ATSDR | Agency for Toxic Substances and Disease Registry |
| | |
| bgs | Below Ground Surface |
| BKSF | Biokinetic Slope Factor |
| BLL | Blood Lead Level |
| BWL | Bridgewood Lake |
| | |
| CalEPA | California Environmental Protection Agency |
| CalOEHHA | California Office of Environmental Health Hazard Assessment |
| CDC | Centers for Disease Control and Prevention |
| cm | Centimeter |
| $cm^2$ | Square Centimeter |
| CN- | Cyanide Ion |
| COPC | Chemical of Potential Concern |
| Cr(III) | Trivalent Chromium |
| Cr(VI) | Hexavalent Chromium |
| CSF | Cancer Slope Factor |
| CSM | Conceptual Site Model |
| | |
| dL | Deciliter |
| DOE | United States Department of Energy |
| | |
| Eh | Redox Potential |
| ELCR | Excess Lifetime Cancer Risk |
| EPA | United States Environmental Protection Agency |
| EPC | Exposure Point Concentration |
| EPD | Effective Predictive Domain |
| | |
| FMP | Former Manufacturing Plant |
| FS | Feasibility Study |
| ft | Foot |
| | |
| g | Gram |
| GI | Gastrointestinal |
| GM | Geometric Mean |
| GSD | Geometric Standard Deviation |
| | |
| HCN | Hydrogen Cyanide |
| HC | Hilliards Creek |
| HEAST | Health Effects Assessment Summary Tables |

| | |
|---|---|
| HHRA | Human Health Risk Assessment |
| HI | Hazard Index |
| HQ | Hazard Quotient |
| IEUBK | Integrated Exposure Uptake Biokinetic |
| IRIS | Integrated Risk Information System |
| IUR | Inhalation Unit Risk |
| kg | Kilogram |
| $km^2$ | Square Kilometer |
| KWL | Kirkwood Lake |
| L | Liter |
| LOAEL | Lowest Observed Adverse Effect Level |
| m | Meter |
| $m^3$ | Cubic Meter |
| MS | Matrix Spike |
| MSD | Matrix Spike Duplicate |
| mg | Milligram |
| NHANES | National Health and Nutrition Examination Survey |
| NJ RDCSRS | New Jersey Residential Direct Contact Soil Remediation Standards |
| NOAEL | No Observed Adverse Effect Level |
| OLEM | Office of Land and Emergency Management |
| ORNL | Oak Ridge National Laboratory |
| PAH | Polycyclic Aromatic Hydrocarbon |
| PAR | Pathways Analysis Report |
| PCB | Polychlorinated Biphenyl |
| PEF | Particulate Emissions Factor |
| PPRTV | Provisional Peer-reviewed Toxicity Value |
| RAGS | Risk Assessment Guidance for Superfund |
| RAIS | Risk Assessment Information System |
| RfC | Reference Concentration |
| RfD | Reference Dose |
| RI | Remedial Investigation |
| RIR | Remedial Investigation Report |
| RME | Reasonable Maximum Exposure |
| RPF | Relative Potency Factor |
| RSL | Regional Screening Level |
| SL | Silver Lake |
| SVOC | Semi-volatile Organic Compound |
| TAL | Target Analyte |
| TCL | Target Compound List |
| TIC | Tentatively Identified Compound |

| | |
|---|---|
| TOC | Total Organic Carbon |
| UCLM | Upper Confidence Limit on the Mean |
| UHC | Upper Hilliards Creek |
| VF | Volatilization Factor |
| VOC | Volatile Organic Compound |
| XRF | X-Ray Fluorescence |

# Executive Summary

The Sherwin-Williams Company (Sherwin-Williams) is conducting a Remedial Investigation/ Feasibility Study (RI/FS) pursuant to Administrative Order on Consent (AOC) Index No. II CERCLA-02-99-2035 (US EPA Region II, 1999). This report presents the results of a human health risk assessment (HHRA) that was conducted for the Waterbodies Unit in Gibbsboro, Voorhees, and Lindenwold, New Jersey. The risk assessment was conducted to determine the need for remedial actions at the site.

The Waterbodies Unit includes the lakes and stream channel that are components of the Sherwin-Williams/Hilliards Creek Site (Hilliards Creek Site) and the United States Avenue Burn Site (Burn Site). The Waterbodies Unit was divided into four exposure areas: Silver Lake (SL), Bridgewood Lake (BWL), Hilliards Creek (HC), and Kirkwood Lake (KWL). The upper portion of Hilliards Creek (Upper Hilliards Creek, or UHC), although part of the Waterbodies Unit, is not included in this HHRA, as it was previously evaluated in the Former Manufacturing Plant (FMP) HHRA.

Environmental media evaluated in the HHRA include soil, sediment, and surface water. Soil exposure pathways included incidental ingestion of soil, dermal contact with soil, and inhalation of volatile organic compounds (VOCs) and particulates potentially emitted from soil due to wind-blown dust. Sediment exposure pathways included incidental ingestion and dermal contact. Surface water exposure pathways included incidental ingestion and dermal contact. Potential consumption of locally caught fish was also evaluated in the HHRA based on data collected in 2017. The receptors evaluated in the HHRA include an adult, adolescent, and child Recreator; an adult, adolescent, and child Swimmer; and an adult, adolescent, and child Angler.

Chemicals of potential concern (COPCs) were determined for each exposure area and medium. COPCs in soil and sediment were determined by comparing the detected concentrations to conservative risk-based screening criteria (the lower of the United States Environmental Protection Agency [EPA] residential Regional Screening Level [RSL] or the New Jersey Residential Direct Contact Soil Remediation Standard [NJ RDCSRS]). COPCs in surface water were determined by comparing to EPA RSLs for tap water. In the absence of an RSL, the lower of the New Jersey Surface Water Quality Standard and federal Ambient Water Quality Standard was used for surface water. COPCs retained for the HHRA include metals, cyanide, polycyclic aromatic hydrocarbon (PAH) compounds, polychlorinated biphenyl (PCB) compounds, semi-volatile organic compounds (SVOCs), and one VOC. It should be noted that the COPCs are not necessarily COPCs in every exposure area or medium.

Risks were evaluated for both cancer and non-cancer effects following EPA guidance, using conservative estimates of exposure that tend to overestimate, rather than underestimate, risk. Risk from exposure to lead in soil was evaluated using blood lead models, as per EPA guidance. Cancer risks are characterized as the incremental probability that an individual will develop cancer over a lifetime due to site-related exposures under the specific exposure scenarios evaluated. EPA's target risk range is given as 1 in 1 million ($1 \times 10^{-6}$) to 1 in 10,000 ($1 \times 10^{-4}$). Non-cancer hazard is expressed as a total hazard index (HI), and EPA uses a target HI of 1. An HI less than or equal to 1 indicates that adverse non-cancer health effects are not expected, even in susceptible populations. An HI greater than 1 does not mean that adverse health effects will

occur, only that further evaluation is warranted. Risk from exposure to lead was evaluated using blood lead models. At the direction of EPA, lead risks are reported as the probability of having a blood lead level (BLL) greater than 5 micrograms per deciliter (µg/dL). EPA considers lead risks to exceed the target risk threshold if the probability of having a BLL greater than the blood lead target is greater than EPA's goal of 5%.

Chromium was detected in soil and sediment from all exposure areas evaluated. At the direction of EPA, chromium risk in soil and sediment was evaluated using two different assumptions for Cr(VI). One assumption was that Cr(VI) was 5% of total chromium, based on the average ratio of Cr(VI) to total chromium obtained from the soil data collected from the FMP in 2016. The other assumption, used as a conservative worst-case, was that Cr(VI) was 100% of the total chromium concentration.

**Assuming 5% Cr(VI) in Soil and Sediment:** Cancer risks were within EPA's target risk range for the adult and adolescent Recreators in all four exposure areas, and for the child Recreator in SL, BWL, and KWL. Cancer risks for the child Recreator exceeded EPA's target risk range in HC. Non-cancer hazards exceeded EPA's target HI for adolescent Recreators in HC, and child Recreators in BWL and HC. Cancer risks were within EPA's target risk range for the adult and adolescent Swimmer in all three lakes and for the child Swimmer in KWL. Cancer risks for the child Swimmer exceeded EPA's target risk range in SL and BWL. Non-cancer hazards were below EPA's target HI for the adult and adolescent Swimmers, but exceeded the target HI for the child Swimmer, in all three lakes.

**Assuming 100% Cr(VI) in Soil and Sediment:** Cancer risks exceeded EPA's target risk range for all three Recreators in HC and for the child Recreator in BWL. Cancer risks were within EPA's target risk range for the adult and adolescent Swimmers, but exceeded the risk range for the child Swimmer in SL, BWL, and KWL. Non-cancer hazards were as reported above. The assumption that chromium in soil and sediment is 100% Cr(VI) increased risks slightly, and there were four scenarios in which the risk increased from below EPA's target level to greater than EPA's target level. For the child Swimmer in KWL, the cancer risk increased to $3 \times 10^{-4}$. For the child Recreator in BWL, the cancer risk increased to $2 \times 10^{-4}$. For the adult and adolescent Recreators in HC, the cancer risk increased to $2 \times 10^{-4}$ and $3 \times 10^{-4}$, respectively.

Although chromium contributes to elevated risk when evaluated as 100% Cr(VI), these risks are likely overestimated, for several reasons. The FMP soil data indicated that Cr(VI) was on average 5% of the total chromium in any sample (Sherwin-Williams, 2016). Based on the conceptual site model (CSM), the source of any Cr(VI) in the HC floodplain was discharges from the FMP that were carried downstream in surface water and sediment. In addition, conditions along HC, such as the high total organic carbon (TOC) from decaying vegetation, favor a reducing environment that would reduce Cr(VI) to Cr(III). Thus, downstream Cr(VI) concentrations are expected to be less than or equal to those in the source area (the FMP). Because the percentage of Cr(VI) in HC sediment is likely to be no higher than in the source area (FMP soil), the assumption that total chromium is 100% Cr(VI) in soil and sediment likely overestimates risk.

The analytes with the greatest contribution to risk or hazard for receptors with risk or hazard above EPA's targets varied by exposure area and receptor, but generally included the following COPCs.[1]

- **Soil:** Arsenic, lead, thallium
- **Sediment:** Arsenic, lead, thallium, benzo(a)pyrene
- **Surface Water:** Arsenic, chromium(VI), lead, thallium, benzo(a)pyrene

Site data discussed in the uncertainty analysis indicates that thallium risks may be consistent with those associated with natural background concentrations, and the chromium risks in surface water may be significantly overestimated due to the fact that chromium in surface water is not likely to be present as Cr(VI) under the observed surface water pH and Eh conditions. Thus, the primary risk-driving COPCs are arsenic, lead, and benzo(a)pyrene.

Lead risks were evaluated for exposure to soil and sediment for adult, adolescent, and child Recreators and Swimmers. Risks were also evaluated for exposure to surface water for the child Recreator and Swimmer. Lead risks exceeded EPA's target of 5% probability for the adult Recreator in HC; the adult Swimmer in BWL and KWL; the child Recreator in all exposure areas; and the child Swimmer in SL, BWL, and KWL.

**Fish Ingestion Risks:** Fish ingestion risks were evaluated two ways: (1) assuming 5% Cr(VI), and (2) assuming 100% Cr(VI). Using the 5% assumption, cancer risks for the adult, adolescent, and child Anglers were $3 \times 10^{-5}$, $3 \times 10^{-5}$, and $5 \times 10^{-5}$, respectively, all within EPA's target risk range. Non-cancer hazard for the adult Angler was 1. Non-cancer hazards for the adolescent and child Anglers were 2 and 3, respectively, above EPA's target HI of 1. Non-cancer hazards were driven by PCBs, and Cr(VI) contributed less than 2% of the HI. The HI for immunological effects was 2 for the child Angler, but at or below 1 for all other endpoints and receptors.

Assuming 100% Cr(VI) increased cancer risks for the adult, adolescent, and child Anglers to $3 \times 10^{-4}$, $4 \times 10^{-4}$, and $6 \times 10^{-4}$, respectively, all were above EPA's target risk range. For all three receptors, chromium was the major contributor (93-99%) to fish ingestion risk. Non-cancer hazards for the adolescent and child Anglers were still 2 and 3, respectively, but the HI increased from 1 to 2 for the adult Angler. Chromium is not considered a primary COPC in fish, however, because Cr(VI) in fish (if present at all) is likely to be much less than 100% of the total chromium concentration. Cr(VI) is expected to be reduced to Cr(III) in the gastrointestinal (GI) tract of fish, due to the low pH (*e.g.*, pH in the stomach of perch ranges between 3.5 and 4.5) (Solovyev *et al*., 2015). In addition, any Cr(VI) that enters the fish through the gills and is transported through cell membranes will be rapidly reduced to Cr(III) (WHO, 2003).

Lead risks for the fish ingestion pathway did not exceed EPA's target of 5% probability for the adult Angler. Lead risks exceeded the target 5% probability of BLL above 5 µg/dL for the child Angler, but this risk was primarily driven by exposure to soil/sediment. The incremental BLL above baseline was 0.1 µg/dL, which is within the 1 µg/dL increment adopted by California (CalOEHHA, 2007).

[1] This list assumed a 20% threshold for contribution to risk or hazard for a given exposure pathway, based on Appendix C-1, Tables 14.1 and 14.2. Appendix C-1 assumes chromium is 5% Cr(VI) in soil, sediment, and fish. Chromium becomes a significant contributor to risk in soil and sediment when it is assumed that chromium is 100% Cr(VI) (Appendix C-2).

# 1 Introduction

The Sherwin-Williams Company (Sherwin-Williams) is conducting a Remedial Investigation/ Feasibility Study (RI/FS) pursuant to Administrative Order on Consent (AOC) Index No. II CERCLA-02-99-2035 (US EPA Region II, 1999). The Waterbodies Unit includes the lakes and stream channel that are components of the Sherwin-Williams/Hilliards Creek Site (Hilliards Creek Site) and the United States Avenue Burn Site (Burn Site).

This report presents the results of a human health risk assessment (HHRA) that was conducted for the Waterbodies Unit in Gibbsboro, Voorhees, and Lindenwold, New Jersey (Figure 1). The risk assessment was conducted to determine the need for remedial actions at the site. The Waterbodies Unit includes Silver Lake (SL), Bridgewood Lake (BWL), Hilliards Creek (HC), and Kirkwood Lake (KWL). The portion of HC addressed in this report is bounded to the east by West Clementon Road and to the west by KWL. The upper portion of Hilliards Creek (Upper Hilliards Creek, or UHC), although part of the Waterbodies Unit, was previously evaluated in the Former Manufacturing Plant (FMP) HHRA. This HHRA presents the risk assessment methodology and results for the evaluation of cancer risk and non-cancer hazard for the Waterbodies Unit (Figure 1). This HHRA is conducted in accordance with United States Environmental Protection Agency (EPA) guidance, the Pathways Analysis Report (PAR) submitted to EPA in April 2017 (Gradient, 2017a), and the comments on the PAR received from the Agency in June 2017 (US EPA Region II, 2017a).

## 1.1 Site Description

The Waterbodies Remedial Investigation Report (RIR) presents the site description, site history, summary of previous investigations and the RI, and a summary of results (Weston, 2018). Therefore, this information is not presented in this document. Figure 1 shows the site location. The exposure areas are shown in Figures 2-6. The exposure areas are discussed in more detail in Section 2.

## 1.2 Current/Future Site Uses

Silver Lake is surrounded by a walking trail, but the water portion of the lake is not used for recreation, because swimming and boating are prohibited by the lake owner. Bridgewood Lake is privately owned by a sportsmen club and is used for recreational catch-and-release fishing and boating. Swimming in BWL has been prohibited by the sportsmen club for the past 40 years. The lake is primarily surrounded by undeveloped, wooded land, and it is assumed that passive recreational activities occur at the lake. Kirkwood Lake is used for recreation such as fishing and boating. KWL may be used for current or future swimming. The future uses of all three lakes are expected to remain the same as the current uses.

The land along the HC corridor, including the creek and adjacent floodplain soils, is largely owned by the Borough of Gibbsboro.[2] The HC upland areas are used for passive recreation, such as walking trails. Hilliards Creek ranges from 0.5-3 feet (ft) deep. The creek may be used for wading, but is not used for swimming, because it is too shallow. The HC corridor is comprised of forested wetlands that form the riparian corridor surrounding the stream as well as scrub-shrub wetland areas (Weston, 2009). Wetlands and adjacent transition areas (transition zones from upland to wetland) and riparian zones (land and vegetation adjacent to a waterbody) are regulated in New Jersey under the Freshwater Wetland Protection Act (NJDEP, 2009), riparian zone permitting requirements (NJDEP, 2014a,b), and the Flood Hazard Area Control Act (NJDEP, 2013), with stringent criteria and permitting requirements for construction or development in these areas. Because the HC corridor includes the creek and associated wetlands, and development in this type of habitat is highly regulated in New Jersey, the most likely future use for the HC corridor will be as a passive recreation area. It should be noted that there are state and federal regulations prohibiting development in wetlands.

## 1.3 Report Organization

This report is organized into the following sections, which detail the exposure pathways and analysis methods used in the HHRA:

- **Section 2. Exposure Areas** – This section defines each of the exposure areas that were evaluated in the HHRA.
- **Section 3. Potential Receptors and Exposure Pathways** – This section presents potentially complete routes of exposure and potentially exposed populations evaluated in the HHRA.
- **Section 4. Data Summary** – This section provides an overview of the available data and the data handling procedures applied in the HHRA.
- **Section 5. Selection of Chemicals of Potential Concern** – This section presents a preliminary screening-level analysis to identify chemicals of potential concern (COPCs) for each environmental medium and exposure area.
- **Section 6. Exposure Point Concentrations** – This section describes the methods used to develop exposure point concentrations (EPCs) for the HHRA.
- **Section 7. Exposure Assessment** – The quantitative exposure assessment methods and exposure parameter assumptions are defined in this section for each receptor population evaluated in the HHRA.
- **Section 8. Toxicity Assessment** – This section provides the sources for identification of non-cancer and cancer toxicity values used in the risk characterization of the HHRA.
- **Section 9. Risk Characterization** – This section presents a brief discussion of how the risks were evaluated.
- **Section 10. Uncertainties** – This section discusses the inherent uncertainties associated with the assumptions used to calculate risks.

[2] The Camden County tax assessor database does not always list an owner for the tax parcels that overlay the exposure areas used in this report. Hilliards Creek traverses two residential properties west of Hilliards Road.

- **Section 11. Conclusions** – This section presents the overall conclusions of the risk assessment.

# 2 Exposure Areas

The Waterbodies Unit was divided into four exposure areas for the HHRA. The exposure areas are geographic designations created for the risk assessment that define subareas of the site with similar anticipated use or similar levels of contamination. The exposure areas are shown in Figures 2-6 and discussed below. Zoning is shown in Figures 7-11; zoning information was obtained from the Gibbsboro Zoning Map (Clarke Caton Hintz, 2009), Voorhees Zoning Map (Voorhees, New Jersey, 2006), and Lindenwold Zoning Map (Key Engineers, Inc., 1998). It should be noted that in all cases, the zoning refers to the land surrounding the waterbody, not to the waterbody itself, because the waterbodies are not zoned for development.

- **Silver Lake (SL):** SL is located just to the north of the FMP; it is approximately 13.5 acres in size, and ranges in depth from approximately 4-9 ft (Weston, 2018). The lake is surrounded by a 0.75-mile walking trail (Gibbsboro, 2010). SL is owned by Brandywine Realty Corp. Swimming and boating in the lake are prohibited by the property owner, and signs are posted surrounding the perimeter of the lake (Weston, 2018). The area around SL is zoned as Office/Technical Park (OTP).
- **Bridgewood Lake (BWL):** BWL is approximately 6 acres in size and is located on the west side of United States Avenue, just south of the FMP. The lake is divided into two lobes by a stone causeway that is located at the upstream quarter of the lake. The lake is very shallow, with maximum water depths of 4-5 ft in the downstream lobe (5.3 acres), and 1.5-2 ft in the upstream lobe (1.7 acres) (Weston, 2016). The northeastern lobe of the lake is owned by a cemetery. To the north, the lake is bordered by wooded land and the cemetery. A sportsmen club is located on the south side of the lake, and this club owns the main section of the lake. Swimming in BWL has been prohibited by the sportsmen club for at least the past 40 years. To the east, the lake is bordered by wooded, undeveloped land, which abuts the bike path adjacent to the railroad tracks. To the west, the lake terminates at West Clementon Road, where a culvert carries the discharge underneath the road. On the west side of the road, the discharge joins HC and proceeds in a westerly direction. The land surrounding the western portion of BWL is owned by a sportsmen club and is primarily zoned as residential. The land surrounding the northeastern lobe of BWL is owned by a cemetery association and is zoned as Office/Residential (OR).
- **Hilliards Creek (HC):** Hilliards Creek[3] originates at SL, flows through a culvert under a paved portion of the FMP in a southwesterly direction, daylights south of Foster Avenue, flows through a culvert under West Clementon Road, and continues in a westerly direction to Kirkwood Lake. The portion of HC between Foster Avenue and West Clementon Road, a distance of approximately 0.2 mile, is called Upper Hilliards Creek (UHC) for the purposes of the remedial investigation. Potential risks to human health from exposure to media in UHC were evaluated as part of the FMP HHRA (Gradient, 2017b); thus, UHC is not included in this HHRA. West of West Clementon Road, HC is joined by an unnamed stream from the outflow of BWL, in an area known as the "Wildlife Refuge/braided stream

[3] Hilliards Creek is referred to on maps of the area typically as "Millard Creek." It is also referred to as "Hilliard Creek." However, the Sherwin-Williams site has historically been referred to as "Hilliards Creek," so that is how it is referenced in this HHRA.

area." The creek flows in a westerly direction through the Gibbsboro Wildlife Refuge, which includes walking trails for area residents. HC flows west into KWL, and the headwaters of the Cooper River join HC approximately 900 ft before HC enters KWL. The HC exposure area covers approximately 39 acres and includes wooded and wetland areas (Weston, 2018). The HC area is bordered by residential properties to the north and undeveloped land to the south. The land adjacent to HC is zoned as residential (R-15 for a 150-ft-wide strip next to West Clementon Road, with the rest of the area zoned R-40).[4] The human health risk for the residential properties was assessed as part of the Residential Properties HHRA (Gradient, 2014). Further west, the land on the north side of HC is zoned as residential (R-40) and age-restricted residential (AR-1). The land on the south side of HC is zoned as residential (R-40) and industrial (M-1).

- **Kirkwood Lake (KWL):** HC flows into KWL approximately 1.6 miles downstream of Foster Avenue at the FMP. KWL is located in Voorhees Township and Lindenwold Borough and is approximately 25 acres in size. The lake is owned by Camden County. The average water depth of KWL is approximately 4 ft, with a maximum depth of 8 ft (Weston, 2017a). The lake is used for recreational activities such as fishing and boating and may be used for current or future swimming. KWL is bordered by residential properties to the north and undeveloped land to the south. The human health risk for the residential properties was assessed as part of the Residential Properties HHRA (Gradient, 2014). A large railroad yard (which includes the New Jersey Transit Lindenwold station) is located approximately 300 ft southwest of KWL. The land on the north side of KWL is zoned as medium density residential (MDR). The land on the south side of KWL is zoned as light industrial (I-1) on the southwest portion near the railroad and single family detached residential (R-2) on the southeastern portion (Key Engineers, Inc., 1998).

[4] Zoning R-40 is residential and allows single-family detached dwellings and other uses, such as parks. Zoning R-15 is residential and allows single-family detached dwellings with a minimum lot area of 15,000 square ft (Gibbsboro, 2015).

# 3 Potential Receptors and Exposure Pathways

The potential receptors, exposure media, and exposure pathways that were evaluated in the HHRA are discussed below, by exposure area, and summarized in Appendix C-1, Table 1.[5]

Media evaluated in the HHRA include soil, sediment, surface water, and fish. Table 1 summarizes the receptors evaluated in each exposure area, as well as current land use and zoning. A conceptual site model (CSM) is presented in Figure 12. The CSM provides information regarding potential chemical sources, potentially affected environmental media, contaminant exposure pathways, and potential receptors located in the various exposure areas. For the potential exposure pathways, the CSM identifies those that are complete, complete but insignificant, or incomplete. Insignificant exposure pathways are those that are possible but expected to have a negligible contribution to overall exposure. Insignificant and incomplete exposure pathways are eliminated from further quantitative consideration in the risk assessment. The impacts of eliminating these pathways are discussed in Section 10.

The main focus of this HHRA is to evaluate potential risks from exposure to surface water, sediment, and fish tissue in the lakes/creek and soil immediately surrounding the lakes/creek; therefore, only recreational scenarios are addressed in this HHRA. Exposures to more inland soils were evaluated in prior HHRAs (*e.g.,* Residential Properties HHRA; FMP Soils HHRA). The scenarios described below include a passive recreation scenario (walking through the woods) in the upland soil areas adjacent to the waterbodies. This scenario would include exposure to surface soil only (depth 0-2 ft below ground surface [bgs]). The areas adjacent to the water bodies are not likely to be developed in the future due to restrictions imposed by state wetland regulations. Therefore, the HHRA does not include future residential, commercial, or industrial scenarios in the areas in or adjacent to the waterbodies, and thus, the HHRA does not evaluate exposure to subsurface soil.

## 3.1 Silver Lake (SL)

SL is part of the FMP and is surrounded by a walking trail. Exposure to soil adjacent to the shore of SL was evaluated as part of the FMP HHRA and, thus, is not evaluated here. Currently, there is no exposure to surface water or sediment in SL, as swimming and boating in the lake are prohibited by the property owner with posted signage (Weston, 2018). In order to evaluate potential future exposures, a future adult, adolescent (6-16 years old), and child (0-6 years old) Recreator were evaluated for exposure to surface water and sediment while wading, and a future adult, adolescent, and child Swimmer were evaluated for exposure to surface water and sediment in the lake while swimming.

[5] Appendix C-1 includes the EPA Risk Assessment Guidance for Superfund (RAGS) Part D Planning Tables, and assumes chromium concentrations in soil, sediment, and fish are 5% Cr(VI). The RAGS Planning Tables use a numbering system and a format that is determined by EPA. Appendix C-2 includes the RAGS Planning Tables for an alternative analysis in which chromium concentrations in soil, sediment, and fish are assumed to be 100% Cr(VI).

The child, adolescent, and adult Recreators are assumed to contact sediment and surface water 2 days per week during the 5 warmest months of the year (May through September) (44 days/year) while potentially wading or boating in the lake. The Recreators are assumed to be exposed to sediment *via* incidental ingestion and dermal contact and to surface water *via* dermal contact. It is assumed that no significant ingestion of surface water will occur during a wading scenario. The exposure durations are 6 years for the child Recreator, 10 years for the adolescent Recreator, and 26 years for the adult Recreator.

The adult, adolescent, and child Swimmer are assumed to swim 105 days/year, based on the average number of days per year (2004-2015) with temperatures greater than 80 degrees Fahrenheit (°F) and precipitation of less than 1 inch (NOAA, 2004-2015). The Swimmers are assumed to be exposed to surface water and sediment *via* incidental ingestion and dermal contact. The exposure durations are 6 years for the child, 10 years for the adolescent, and 26 years for the adult.

## 3.2 Bridgewood Lake (BWL)

BWL is located west of United States Avenue and is primarily surrounded by undeveloped, wooded land. BWL is privately owned by a sportsmen club and is used for recreational catch-and-release fishing and boating. Swimming in BWL has been prohibited by the sportsmen club for the past 40 years. The receptors evaluated in BWL include a current/future adult, adolescent, and child Recreator and a future adult, adolescent, and child Swimmer.

The adult, adolescent, and child Recreators are assumed to visit the upland soil areas adjacent to the lake[6] for passive recreation 150 days/year (3 days/week, for 50 weeks/year). The exposure durations are 6 years for the child, 10 years for the adolescent, and 26 years for the adult Recreator. The Recreators are assumed to be exposed to surface soil (0-2 ft) *via* incidental ingestion, dermal contact, and inhalation of particulates.

Recreators were evaluated for exposure to surface water and sediment in BWL. The child, adolescent, and adult Recreators are assumed to contact sediment and surface water 2 days per week during the 5 warmest months of the year (May through September) (44 days/year) while potentially wading or boating in the lake. The Recreators are assumed to be exposed to sediment *via* incidental ingestion and dermal contact and surface water *via* dermal contact.

BWL is not currently used for swimming, but future child, adolescent, and adult Swimmers who swim in the lake were evaluated. The Swimmer is assumed to swim 105 days/year, based on the average number of days per year (2004-2015) with temperatures greater than 80°F and precipitation of less than 1 inch (NOAA, 2004-2015). It is assumed that the swimming occurs during the warmest 4 months of the year, *i.e.*, between May 15 and September 15. The Swimmer is assumed to be exposed to surface water and sediment *via* incidental ingestion and dermal contact. The exposure duration is 6 years for the child, 10 years for the adolescent, and 26 years for the adult.

[6] Upland soil areas evaluated here are those that were not included in the Burn Site HHRA. Soils directly east of BWL, between BWL and United States Avenue, were included in the Burn Site HHRA and, thus, are not included here.

## 3.3 Hilliards Creek (HC)

The receptors evaluated in HC include a current/future adult, adolescent, and child Recreator. The Recreator is assumed to visit the upland area adjacent to HC for passive recreation 150 days/year (3 days/week, for 50 weeks/year) and to be exposed to surface soil (0-2 ft) *via* incidental ingestion, dermal contact, and inhalation of particulates from windblown dust.

The Recreator is assumed to contact sediment and surface water 2 days per week during the 5 warmest months of the year (May through September) (44 days/year) while potentially wading in HC. Due to the shallow nature of HC (approximately 0.5-3 ft deep) it is assumed that swimming will not occur. The Recreator is assumed to be exposed to sediment *via* incidental ingestion and dermal contact and surface water *via* dermal contact. It is assumed that no significant ingestion of surface water will occur during a wading scenario. The exposure durations are 6 years for the child Recreator, 10 years for the adolescent Recreator, and 26 years for the adult Recreator.

## 3.4 Kirkwood Lake (KWL)

KWL is used for recreational activities such as fishing and boating. The receptors evaluated in KWL include a current/future adult, adolescent, and child Recreator, and a current/future child, adolescent, and adult Swimmer.

The adult, adolescent, and child Recreator are assumed to visit the upland soil areas adjacent to the south side of the lake[7] for passive recreation 150 days/year (3 days/week, for 50 weeks/year). The child and adult Recreator are assumed to be exposed to surface soil (0-2 ft) *via* incidental ingestion, dermal contact, and inhalation of particulates. The exposure durations are 6 years for the child Recreator, 10 years for the adolescent Recreator, and 26 years for the adult Recreator.

Recreational receptors were evaluated for exposure to surface water and sediment in KWL. The Recreators are assumed to contact sediment and surface water 2 days per week during the 5 warmest months of the year (May through September) (44 days/year) while potentially wading or boating in the lake. Recreators are assumed to be exposed to sediment *via* incidental ingestion and dermal contact and surface water *via* dermal contact.

A current/future child, adolescent, and adult Swimmer were evaluated in KWL. The Swimmer is assumed to swim 105 days/year, based on the average number of days per year (2004-2015) with temperatures greater than 80°F and precipitation of less than 1 inch (NOAA, 2004-2015). The Swimmer is assumed to be exposed to surface water and sediment *via* incidental ingestion and dermal contact. The exposure duration is 6 years for the child, 10 years for the adolescent, and 26 years for the adult.

KWL is currently used for fishing; thus, a child, adolescent, and adult Angler were evaluated for potential ingestion of fish from KWL.

[7] Soil on the north side of KWL was evaluated in the Residential Properties HHRA.

# 4 Data Summary

This section summarizes the available data for the site and provides the rationale for the data selected for use in the HHRA. The data used in the HHRA includes the RI site characterization data collected by Sherwin-Williams and EPA.

The RI data are from 2005-2012. The number of sample locations and samples included in the HHRA are presented in Table 2. Appendix A lists the sample locations, and the individual samples, included in the HHRA. Sample locations are shown in Figures 2-6, which correspond to different portions of the site: SL, BWL, HC (eastern section), HC (western section), and KWL, respectively.

Samples were analyzed for Target Compound List (TCL) volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides/polychlorinated biphenyls (PCBs), and Target Analyte (TAL) metals plus cyanide, although not all samples were analyzed for all analyte groups.

## 4.1 General Data Considerations

Several sets of field duplicate samples were collected for quality control and quality assurance. The field duplicate samples were averaged with their parent sample to obtain one result per sample. At sediment and surface water locations that were sampled more than once, the HHRA will include both samples as independent data points.

The site sampling data include the results from the field X-ray fluorescence (XRF) screening conducted during sampling activities, which were utilized to make field decisions on additional step-out sampling to aid in delineating the extent of contamination. The XRF data will not be used in the HHRA, because these screening data are not as accurate as laboratory data, and the existing laboratory data are adequate to describe site conditions and support the calculation of EPCs for the risk assessment.

Tentatively identified compounds (TICs) were reported with the analytical data; however, only those with published toxicity factors were included in the HHRA. The methodology used to select the TICs included in the HHRA is discussed in Section 5.

It should be noted that the stream channels that comprise HC meander; thus, the representation of the main stream channel for HC on the figures is a schematic only. For this reason, some HC transects include sediment samples from locations that may not appear (in the figures) to be in a stream; for example, on the HC transect that extends from HCSB0099 on the north end, down to HCSB0210 on the south end (Figure 5). However, all sediment and soil samples were used in the HHRA with their media as originally classified in the field. The field crew documented whether a sample was soil or sediment based on conditions in the field at the time; thus, there is confidence in the matrix classification.

## 4.2 Soil

Soil samples collected from depths of 0-2 ft bgs were used to assess exposure to surface soil for the adult and child Recreators. The soil samples used in the HHRA include 57 samples in BWL, 284 samples in HC, and 36 samples in KWL. The available data are adequate to describe site conditions and support the calculation of EPCs for the risk assessment.

## 4.3 Sediment

Sediment samples collected from a depth of 0.0-0.5 ft bgs were used to assess exposure to sediment for the Recreators and Swimmers. This depth was used because human receptors are likely to be exposed only to the surface sediments. The sediment samples used in the HHRA include 33 samples in SL, 63 samples in BWL, 122 samples in HC, and 135 samples in KWL. The available data are adequate to describe site conditions and support the calculation of EPCs for the risk assessment.

## 4.4 Surface Water

Surface water samples from all depths were used to assess exposure to surface water for the Recreators and Swimmers. The metals concentrations from unfiltered samples were used to evaluate surface water exposure because it is assumed that dermal contact and ingestion while swimming occurs with unfiltered surface water. The surface water samples used in the HHRA include 19 samples in SL, 27 samples in BWL, 26 samples in HC, and 12 samples in KWL. The available data are adequate to describe site conditions and support the calculation of EPCs for the risk assessment.

## 4.5 Fish

Sherwin-Williams collected fish tissue from KWL in September 2017, under a work plan submitted to EPA in July 2017 (Weston, 2017a). Further refinements in the sample analysis were discussed with EPA on September 14, 2017, followed by a letter sent to EPA describing the final sample analysis (Weston, 2017b). EPA concluded that KWL was the appropriate lake for fish tissue sampling, because it is downgradient of the three Sherwin-Williams sites, contaminants at these sites may have been conveyed to KWL *via* particle transport, and the lake may have served as a sediment trap. KWL also had higher average concentrations of PCBs compared to BWL (US EPA Region II, 2017b). In addition, people currently fish in KWL, while BWL is privately owned, stocked, and is catch-and-release only. In addition, Silver Lake is privately owned and posted as "No Fishing."

During the September 11-14, 2017, sampling event, 51 total fish tissue samples were collected, along with 2 duplicates and 2 samples designated for MS/MSD analysis. The fish were collected from four zones of KWL (A through D) by electrofishing and trot-line. These fish samples were comprised of two target feeding guilds, as specified in the work plan. The benthic omnivore feeding guild included brown bullhead (*Ameiurus nebulosus*), common carp (*Cyprinus carpio*), and channel catfish (*Ictalurus punctatus*) as the target species. The sport fish feeding guild included largemouth bass (*Micropterus salmoides*), black crappie (*Pomoxis nigromaculatus*), and sunfish (*Lepomis sp.*) as the target species.

Based on the catch results and in consultation with EPA, the following samples were submitted to the laboratory (TestAmerica) for homogenization and analysis:

**Benthic Omnivores**

- 21 brown bullhead fish tissue fillet samples
  - Submitted as skinless fillet samples per the work plan.
- 8 common carp fish tissue fillet samples – plus a duplicate and a matrix spike/matrix spike duplicate (MS/MSD)
  - Submitted as skin-on fillet samples per the work plan.

**Sport Fish**

- 5 largemouth bass fish tissue fillet samples – plus a duplicate and an MS/MSD
  - Submitted as skin-on fillet samples per the work plan.
- 6 black crappie fish tissue fillet samples
  - Submitted as skin-on fillet samples per the work plan.

These 40 samples (plus two duplicates) were frozen and sent to TestAmerica for processing on Monday, September 18, 2017. Two additional black crappie and nine additional sunfish that were collected were retained and frozen, but were not submitted to the laboratory for analysis, because they were not deemed necessary at the time, per discussion with EPA. The samples were received by the laboratory on September 19, 2017, and processing for analysis was initiated on October 4, 2017.

On October 5, 2017, the TestAmerica project manager identified an issue with the post-homogenization sample weights being lower than expected. The TestAmerica project manager immediately contacted the Weston project manager to report his findings that while homogenizing the "skin-on" fish fillets, the laboratory technician encountered difficulty with homogenizing the fillets with the skin, and had removed and disposed of most of the skin from the majority (80%) of the "skin-on" samples. While skin can be a difficult component of tissue to homogenize, the requirement to homogenize and analyze the fillets with skin was discussed with the TestAmerica project manager prior to submission of the samples; thus, the removal of the skin was a laboratory error. This incorrect sample preparation resulted in a majority (80%) of "skin-on" fish tissue samples being homogenized without their associated skin. Skin-on fillets were required in the approved work plan for the sport fish (largemouth bass and black crappie) as well as the common carp (brown bullhead were not proposed for skin-on analysis, because the skin of this fish species is not edible).

As a result of the laboratory processing, the fish samples were prepared in the following condition.

**Benthic Omnivores**

- Brown Bullhead (21 samples)
  - Skinless fillets submitted and homogenized according to the Work Plan.
- Common Carp (8 samples plus a duplicate)
  - One of eight samples plus the duplicate were processed with the skin on (the parent sample of the duplicate was processed with the skin off)..

**Sport Fish**

- Largemouth Bass (5 samples plus a duplicate)
  - One of five samples were processed with the skin on (neither the duplicate nor the duplicate parent sample were processed with the skin on).
- Black Crappie (6 samples)
  - One of six samples were processed with skin on.

Table G.1 in Appendix G presents a summary of the collected fish, with a column (Skin Removed) indicating which of the largemouth bass, black crappie, and common carp had the skin removed.

**Fish Tissue Analyses**

Following discussion with EPA, a proposal was submitted on October 18, 2017, to analyze all of the fish with sufficient tissue mass that had been processed and held frozen at the laboratory. EPA agreed that the extra black crappie and sunfish samples that had been retained and frozen be submitted for analysis as additional skin-on samples. In order to provide the greatest amount of tissue, both left and right side fillets were submitted for analysis, with the skin on both fillet sides. The two extra black crappie and three of the extra sunfish samples were of sufficient size to provide sufficient tissue mass for all analyses. The fillets from the four smallest sunfish samples were composited into two composite samples in order to provide sufficient tissue mass (Table G.2 in Appendix G). This resulted in two additional black crappie samples and five additional sunfish samples (Table G.3 in Appendix G). In addition, two additional duplicate samples (KWCC0002-TI-AA-R1-1 and KWLB0002-TI-AA-R1-1) were analyzed from skin-on parent samples.

Two of the twenty-one brown bullhead samples were below the target tissue mass (by 1.0-1.5 grams [g]) necessary for percent moisture analysis; the remaining 19 samples had sufficient tissue mass for all analyses. EPA requested that the two samples below target tissue mass not be analyzed.

In summary, a total of 46 fish tissue fillet samples, plus three duplicate samples, were collected from KWL (Table G.3 in Appendix G). The fish samples included 28 benthic omnivore (brown bullhead and common carp) samples and 18 sport fish (black crappie, largemouth bass, and sunfish) samples. All the collected fish were considered edible species. The field duplicate samples were averaged with their parent sample to obtain one result per sample. The fish samples are listed in Appendix A, and the fish data are presented in Appendix B. The available

data are adequate to describe site conditions and support the calculation of EPCs for the risk assessment.

## 4.6 Background Data

Several soil, sediment, and surface water samples were collected in 2005 and 2006 from locations that were identified as background areas. In 2014, as part of the Dump Site ecological risk assessment, background samples for soil, sediment, and surface water were collected to augment the existing background dataset (Gradient, 2015). In 2017, samples of sediment and surface water were collected from Clement Lake to determine its suitability for use as a reference location (Gradient, 2018). Based upon review of the data collected in 2017, EPA approved the use of Clement Lake as a reference lake for the Waterbodies OU (Nace, 2018). The maximum detected background concentrations are presented in the Appendix C-1, Table 2 series for soil, sediment, and surface water. The 2017 Clement Lake data were used as the background values for sediment and surface water in SL, BWL, and KWL. The 2005-2014 background data were used as background for soil, sediment, and surface water in the HC exposure area. Background data are not used for any purpose in the risk assessment other than filling in the required value in the Appendix C-1, Table 2 screening tables. In general, site concentrations were higher than the maximum detected background concentrations.

# 5 Selection of Chemicals of Potential Concern

## 5.1 Data Used

A screening-level analysis was conducted to identify the COPCs to be evaluated in the quantitative risk assessment. The maximum detected soil and sediment concentrations were screened against risk-based screening criteria for soil. The soil screening criteria were the lower of either the EPA Regional Screening Levels (RSLs) for residential soil or the New Jersey Residential Direct Contact Soil Remediation Standards (NJ RDCSRSs) (US EPA, 2017a; NJDEP, 2017). The EPA RSLs used for screening for all environmental media were those in which non-cancer hazards are calculated with a target hazard quotient (HQ) of 0.1 and cancer risks are calculated with a target risk of $1 \times 10^{-6}$ (US EPA, 2017a). The RSLs calculated with an HQ of 0.1 were used to account for chemicals that may act through the same target organ/effect. The maximum detected surface water concentrations were screened against the EPA RSL for tap water (US EPA, 2017a). In the absence of an RSL, the lower of the New Jersey Surface Water Quality Standard and the EPA Ambient Water Quality Standard was used (NJDEP, 2011; US EPA, 2015a).

For several compounds with no published screening criteria, a screening value for a suitable surrogate compound was used (Table 3). For acenaphthylene and phenanthrene, structurally related polycyclic aromatic hydrocarbons (PAHs) (acenaphthene and anthracene, respectively) were used as surrogate compounds (US EPA, 2010a; US FDA, 2010; FLDOH, 2010). For benzo(g,h,i)perylene, pyrene was used as a surrogate because it was the most chemically similar PAH with the lowest reference dose (RfD) within Group 2 PAHs (US EPA, 2010a). For 4-nitrophenol, 2,4-dinitrophenol was used as a surrogate compound based on a comparative toxicity study that indicates a higher toxicity for 2,4-dinitrophenol (Koizumi *et al*., 2001). m-Xylene was used as the surrogate for m-&p-xylenes when they are reported combined, because m-xylene has a slightly lower screening value than p-xylene. For all other compounds in Table 3, the surrogate compound used for screening was selected because it was the closest chemical match with a screening criterion (*e.g*., 1,4-dichlorobenzene was used as the surrogate for 1,3-dichlorobenzene, and cyclohexane was used as the surrogate for methylcyclohexane).

For several compounds, the EPA RSL table offers soil criteria for multiple species or forms of a given compound. In most cases, little information is available about the specific form of a compound present at the site, because the results are reported only as the total analyte (*e.g.*, total thallium). For analytes that have screening criteria for multiple forms, either the most conservative value (lowest RSL) or the criterion for the most generic or widely applicable form (*e.g.*, thallium soluble salts) was selected (Table 4).

Chromium was analyzed as total chromium in all media at the site. Total chromium concentrations were screened against the RSL for Cr(VI), and chromium was retained as a COPC in all exposure areas for all media. Chromium does not exceed the RSL for trivalent chromium, Cr(III), in any exposure area or medium; thus, risks were not evaluated for Cr(III). The assumptions used for the chromium data are discussed in Section 5.4.

As noted in Section 4, field duplicate samples were averaged with their parent sample to obtain one result per sample. Note that this approach sometimes resulted in cases in which the maximum value used for screening is actually an average of two samples. However, there are no cases in which this approach would change the COPC decision for a particular compound.

The screening to determine COPCs was conducted using all the data from the list of TCL/TAL compounds (*i.e.*, compounds on the standard analyte list of VOCs, SVOCs, metals, inorganics, and pesticide/PCBs).

## 5.2 Screening Results

The results of the screening evaluation and the preliminary identification of COPCs for each medium and exposure area are summarized in Table 5; only analytes that are COPCs in at least one exposure area are listed. Detailed screening results by exposure area and medium are presented in Appendix C-1. Analytes with maximum concentrations above the risk-based screening criteria were retained as COPCs for the risk assessment. Compounds were not eliminated as COPCs based on background concentrations.

The COPCs retained for the HHRA include a total of 30 COPCs (Table 5). COPCs retained in one or more media include 16 metals, cyanide, 2 PCBs (Aroclors), 9 SVOCs, 1 VOC, and 1 TIC.

Four analytes (calcium, magnesium, potassium, and sodium) were not retained as COPCs because they are essential human nutrients, present at low concentrations, and toxic at only very high doses (US EPA, 1989).

EPA guidance notes that a chemical can be excluded from a quantitative risk assessment if it is detected infrequently and is not detected in other media or at high concentrations (US EPA, 1989). Analytes with exceedances of screening criteria in only one exposure area that had a low detection frequency (less than 5%), were not retained as COPCs (US EPA, 1989). These analytes are indicated with "LDF" on the Appendix C-1, Table 2 series screening tables. The rationale for the elimination of these compounds is discussed below, and the data for these compounds are summarized in Table 6.

- Atrazine was detected in one soil sample from HC (HCSB0018, 0.0-0.5 ft), at a concentration of 4.4 milligrams per kilogram (mg/kg), above the screening criterion of 2.4 mg/kg. The detection frequency was 0.9% in HC soil. Atrazine is not a COPC in any other exposure area. Atrazine was also not detected in HC sediment or surface water.
- Aroclor-1242 was detected in two sediment samples from KWL, and one sample (KWDD0036, 0.0-0.5 ft bgs) had a concentration (0.29 mg/kg) slightly above the screening criterion of 0.2 mg/kg. The detection frequency was 2% in KWL sediment. Aroclor-1242 is not a COPC in any other exposure area. Aroclor-1242 was also not detected in KWL soil or surface water.
- Aroclor-1248 was detected in one soil sample from HC at a concentration of 0.13 mg/kg, which is above the screening criterion of 0.12 mg/kg. The detection frequency was 0.5% in HC soil, and Aroclor-1248 was not detected in any other exposure area or in sediment or surface water from HC.

- Bis(2-chloroethyl)ether was detected in one sediment sample from BWL, at a concentration of 0.25 mg/kg, just above the screening criterion of 0.23 mg/kg. The detection frequency was 2% in BWL sediment. Bis(2-chloroethyl)ether is not a COPC in any other exposure area. Bis(2-chloroethyl)ether was also not detected in BWL soil or surface water.
- Aldrin was detected in one surface water sample from BWL, at a concentration of 0.000001505 mg per liter (mg/L), above the screening criterion of 0.00000092 mg/L. The detection frequency was 4.8% in BWL surface water. Aldrin is not a COPC in any other exposure area. Aldrin was also not detected in any sediment.
- Dieldrin was detected in two surface water samples. In the sample from BWL, dieldrin was detected below the screening criterion of 0.0000018 mg/L. In the sample from SL, dieldrin was detected at a concentration of 0.0000052 mg/L, above the screening criterion. Dieldrin was detected in 1 of 16 samples in SL (and 2 of 66 samples overall) and is not a COPC in any other exposure area. Dieldrin was detected in HC soil and sediment but had no exceedances.
- Heptachlor was detected in one surface water sample from BWL, at a concentration of 0.00000151 mg/L, above the screening criterion of 0.0000014 mg/L. The detection frequency was 4.8% in BWL surface water. Heptachlor is not a COPC in any other exposure area. Heptachlor was also not detected in BWL sediment or in any soil.
- Chloroform was detected in one surface water sample from HC, at a concentration of 0.002 mg/L, above the screening criterion of 0.00022 mg/L. The detection frequency was 4% in HC, and chloroform is not a COPC in any other exposure area. Chloroform was also not detected in HC sediment or any soil.
- Pentachlorophenol was detected in one surface water sample from SL, at a concentration of 0.000047 mg/L, above the screening criterion of 0.000041 mg/L. Pentachlorophenol was detected in 1 of 19 samples in SL. Although it was also detected in BWL surface water, it was not a COPC in BWL or any other exposure area. Pentachlorophenol was detected but did not have exceedances in BWL and HC soil.

EPA recommends conducting risk assessments for "the most important chemicals (e.g., those contributing 99 percent of the risk)" (US EPA, 1989). The analytes discussed above had exceedances in only one exposure area and environmental medium, a low detection frequency, and are not COPCs in other exposure areas; therefore, these analytes were eliminated as COPCs.

## 5.3 Screening for Tentatively Identified Compounds

An evaluation was conducted for the TICs reported by the laboratory in the samples being used in the HHRA. The laboratory does not run calibration standards for TICs. TICs are identified by the laboratory instrumentation based on a comparison between the sample spectra and the spectra stored in an electronic library. Because the laboratory does not run calibration standards for TICs, the compound identification is not certain, and all TIC concentrations are considered estimated (J) values. The TIC data have not been validated.

Appendix D, Table 1 presents the TICs detected in soil (0-2 ft), sediment (0.0-0.5 ft), and surface water; it lists the number of samples in which each TIC was detected and the range of concentrations reported for each TIC. Many TIC names are similar (*i.e.*, the same compound is reported with different suffix values); thus, in Appendix D, Table 1, the suffix values have been removed from the compound name in order to consolidate the list of TICs.[8] Because the same TIC may be detected at multiple retention times in the same sample, the TIC concentrations are based on the maximum detection of each TIC per sample and analysis.

The list of TICs was reviewed to determine those that have toxicity factors and screening values published by EPA. The search was conducted using EPA's RSL Table (US EPA, 2017a), which lists toxicity factors for over 800 analytes from the following sources: EPA's Integrated Risk Information System (IRIS), EPA's Provisional Peer-reviewed Toxicity Values (PPRTVs), EPA's Health Effects Assessment Summary Tables (HEAST), the Agency for Toxic Substances and Disease Registry (ATSDR), and the California Environmental Protection Agency (CalEPA). The TICs were also compared to the NJ RDCSRS criteria. Screening criteria were identified for a total of 15 compounds. The TICs were screened against the criteria by exposure area and medium (Appendix D, Tables 2-4).[9]

TICs with exceedances of screening criteria were evaluated for detection frequency, to be consistent with the screening for the target analytes. In general, TICs with exceedances that had a detection frequency of less than 5% (within an exposure area and soil depth interval) were eliminated as COPCs. In soil (0-2 ft), no TICs exceeded screening criteria (Appendix D, Table 2). In sediment (0.0-0.5 ft), a total of four TICs had exceedances in one or more exposure areas (Appendix D, Table 3). Three of these TICs had a low detection frequency and are already included on the COPC list (see Table 5); thus only benzo(j)fluoranthene in SL was retained as a COPC in sediment. In surface water, none of the reported TICs had screening criteria (Appendix D, Table 4).

## 5.4 Chromium Data

The data collected from the exposure areas that comprise the Waterbodies Unit were analyzed for total chromium, but not for hexavalent chromium, Cr(VI).[10] The potential presence of Cr(VI) in soil and sediment was evaluated using a relationship developed from the Cr(VI) data collected from the FMP in 2016. The CSM postulates that substances from the FMP were carried downstream in HC surface water and sediment, and that periodic stream flooding deposited those substances onto HC floodplain soil. The 2016 FMP dataset included a total of 146 soil samples (from 46 borings) that were analyzed for both total chromium and Cr(VI). These data were used to examine the relationship between Cr(VI) and total chromium (Sherwin-Williams, 2016). The ratio of Cr(VI) to total chromium was calculated for each sample, using the detection limit for samples with non-detected Cr(VI). For the entire dataset, the Cr(VI) ratio ranged from 0.01-30%, with an average Cr(VI) ratio of 5%. It should be noted, however, that the maximum value of 30%

[8] Note that all TICs are listed as they were reported by the laboratory. TIC names may appear truncated, may be listed more than once with a slightly different spelling (different commas, dashes, or spaces), or may be misspelled.
[9] The TICs are grouped by analysis (VOC *vs.* SVOC) in Appendix D, Table 1, but not in Appendix D, Tables 2-4, in order to consolidate results for each TIC.
[10] Cr(VI) was analyzed in only one sample (SL-SD-2 on 11/23/98). Cr(VI) in this sample was 0.725 mg/kg, which was 2% of the total chromium concentration (36.5 mg/kg). The Cr(VI) data from this sample were not used in the HHRA, so that the Cr(VI) EPC was calculated consistently for all samples.

was determined to be an outlier[11] and is not considered to be representative of the overall dataset (Sherwin-Williams, 2016).

The HHRA evaluated risk from Cr(VI) using two different assumptions for the Cr(VI)/total chromium ratio, at the direction of EPA. Cr(VI) was assumed to be either 5% or 100% of the total chromium concentration, for both soil and sediment. The 5% value was used to evaluate risk using the Cr(VI) ratio developed from the soil data collected at the FMP. In the absence of valence-specific chromium data, the 100% value was selected to represent potential exposure using an EPA regional, health-protective assumption that the chromium detected was entirely in the hexavalent form. Because surface water was not analyzed for Cr(VI), the HHRA used the conservative assumption that the Cr(VI) concentration is equivalent to the total chromium concentration, to be consistent with the previous HHRAs for the other Sherwin-Williams sites.

## 5.5 Fish

For fish tissue data, the maximum detected concentration of each constituent was screened against risk-based criteria. For all analytes except lead, the fish screening concentration was calculated using the EPA RSL Calculator (US EPA, 2017a), using a fish ingestion rate of 26 g/day. Chromium was screened against the RSL for Cr(VI). The COPCs in fish included arsenic, chromium, lead, Aroclor-1254, Aroclor-1260, 4,4'-DDD, and 4,4'-DDE. Summary statistics and screening results for fish data are presented in Appendix C-1, Table 2.12. Fish ingestion risks were evaluated two ways: (1) assuming chromium was 5% Cr(VI) (results in Appendix C-1), and (2) assuming chromium was 100% Cr(VI) (results in Appendix C-2).

Fish data were treated as one combined dataset for the HHRA. The implicit assumption in using the combined dataset (with the mix of fish as collected) is that the species caught as part of the sampling event, which was conducted over the course of 1 week, will be similar to the mix of species caught and consumed by a typical angler over time. The impacts of this assumption are discussed in Section 9.

[11] This sample was collected from a location under the slab of a former building, in an area containing fill materials.

# 6 Exposure Point Concentrations

In a risk assessment, an EPC represents the concentration of a chemical in an environmental medium to which an individual is exposed. Soil, sediment, and surface water EPCs were calculated by exposure area using the data from the depth range appropriate for each receptor. EPCs for the non-lead COPCs were the 95% upper confidence limit on the mean (UCLM) or the maximum value, whichever is lower (EPCs for lead are discussed below). The individual results from all samples within the appropriate depth interval were used to calculate the EPC. The 95% UCLM values were calculated using EPA's ProUCL software Version 5.1 (US EPA, 2015b), using the option that specifies whether a value is a non-detect. If the 95% UCLM is higher than the maximum detected value, or if it cannot be calculated due to too few data points or too few detects, the maximum detected concentration within the exposure area was used as the EPC. EPCs for TICs were calculated using the detected concentrations only, and were the 95% UCLM or the maximum value, whichever is lower.

Lead risks from incidental soil and sediment ingestion were evaluated using EPA's Adult Lead Model (ALM) (US EPA, 2003a) for the adult Recreator and Swimmer. EPA's blood lead model, known as the Integrated Exposure Uptake Biokinetic (IEUBK) model (US EPA, 1994a, 2010b), was used for the child Recreator and child Swimmer. Lead risks from ingestion of surface water while swimming were evaluated only for the child Swimmer. Both models estimate a central tendency (geometric mean [GM]) BLL on the basis of average or typical exposure parameter values. Therefore, for lead, EPCs for soil, sediment, and surface water were the arithmetic mean of all the samples within the exposure area from the appropriate depth interval. The mean was used as the EPC to be consistent with EPA guidance (US EPA, 2003a). Lead EPCs are discussed further in Section 7.2. The sample depths used in the HHRA were 0-2 ft for soil, 0-0.5 ft for sediment, and all depths (0-9 ft) for surface water.

Chromium is a COPC in soil and sediment in all exposure areas. As previously discussed, risks were evaluated two ways: first, assuming that 5% of the chromium present in soil and sediment is Cr(VI), and second, assuming 100% of the chromium in these media is Cr(VI). The 5% evaluation was done by multiplying the chromium EPCs in soil and sediment by 5%. The tables showing calculations for the 5% chromium evaluation are presented in Appendix C-1, and the calculations for the 100% chromium evaluation are presented in Appendix C-2.

# 7 Exposure Assessment

## 7.1 Quantification of Exposure

This section discusses the basis for calculating human intake levels resulting from exposures to COPCs other than lead and describes each input parameter (lead risk inputs are discussed in Section 7.2). Exposure estimates represent the daily dose of a chemical taken into the body, averaged over the appropriate exposure period, expressed in the units of mg of chemical per kg of human body weight per day. The primary source for the exposure equations used in the HHRA is the EPA's Risk Assessment Guidance for Superfund (RAGS) (US EPA, 1989).[12] The generalized equation for calculating chemical intakes is shown below:

$$I = \frac{EPC \times CR \times EF \times ED}{BW \times AT}$$

where:

- I = Intake,[13] the amount of chemical at the exchange boundary (mg/kg body weight-day)
- EPC = Exposure Point Concentration, the chemical concentration contacted over the exposure period at the exposure point (*e.g.*, mg/kg in soil)
- CR = Contact Rate, the amount of contaminated medium contacted per unit time or event (*e.g.*, soil ingestion rate [mg/day])
- EF = Exposure Frequency, how often exposure occurs (days/year)
- ED = Exposure Duration, how long exposure occurs (years)
- BW = Body Weight, the average body weight over the exposure period (kg)
- AT = Averaging Time, period over which exposure is averaged (days)

Exposure factors (*e.g.*, contact or ingestion rate, exposure frequency, exposure duration, body weight) are the parameters that are used to calculate a receptor's exposure for a given exposure scenario. The values used for each exposure factor are summarized in Appendix C-1 (Table 4.1) and are discussed in detail below. The exposure factor input values are consistent with current EPA guidance. When appropriate, exposure parameters were based on site-specific considerations and professional judgment.

Cancer risks for the child (ages 0-6 years) and adolescent (ages 6-16 years) receptors were calculated separately for carcinogens with mutagenic modes of action to account for potentially increased susceptibility to mutagenic carcinogens for early life exposures (US EPA, 2005). Compounds treated as acting with mutagenic modes of action include hexavalent chromium, benzo(a)anthrancene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, and trichloroethylene. For the mutagens,

[12] Note that this approach is not used to evaluate lead. Consistent with EPA guidance, lead risk is evaluated using blood lead models.
[13] Expressed as a dose for dermal contact and a concentration for inhalation exposure.

intakes were calculated separately for the following age groups: 0-2 years old, 2-6 years old, and 6-16 years old, with exposure durations of 2, 4, and 10 years, respectively.

### 7.1.1 Incidental Ingestion of Soil

For the incidental soil ingestion pathway, intake was calculated as:

$$Intake\left(\frac{mg}{kg \cdot day}\right) = \frac{C_{soil}\left(\frac{mg}{kg}\right) \times B \times IR_{soil}\left(\frac{mg}{day}\right) \times FS \times EF\left(\frac{days}{yr}\right) \times ED(yrs) \times 10^{-6}\ \frac{kg}{mg}}{BW(kg) \times AT(days)}$$

where:

| | | |
|---|---|---|
| $C_{soil}$ | = | Concentration of the Chemical in Soil (mg/kg) |
| B | = | Relative Bioavailability, the relative oral absorption fraction (unitless) |
| $IR_{soil}$ | = | Soil Ingestion Rate (mg/day) |
| FS | = | Fraction of Soil from the Site (unitless) |
| EF | = | Exposure Frequency (days/year) |
| ED | = | Exposure Duration (years) |
| BW | = | Body Weight (kg) |
| AT | = | Averaging Time (days) |

Conservative EPA-recommended values were used for each of the input parameters. The basis for each value used is detailed below.

*Concentration of the Chemical in Soil ($C_{soil}$).* The lower of either the 95% UCLM or the maximum detected concentration in soil was used as the EPC.

*Relative Bioavailability (B).* To accurately quantify potential exposures from incidental ingestion of soil, it is important to consider the amount of a chemical that is solubilized in gastrointestinal (GI) fluids and absorbed across the GI tract into the bloodstream. A chemical present in soil may be absorbed less completely than the same dose of the chemical administered in toxicity studies used to evaluate safe dose levels. A relative bioavailability estimate for a specific compound represents the absorption fraction from soil (the exposure route of concern) relative to the absorption fraction from food or water (in most toxicity studies, chemical doses are administered in food or water).

It is widely recognized that the bioavailability of many metals and organics from soil tends to be considerably lower than their bioavailability from food or water. EPA guidance recognized the need to make adjustments for the reduced bioavailability of compounds in soil. In Appendix A of EPA's RAGS, EPA noted:

> If the medium of exposure in the site exposure assessment differs from the medium of exposure assumed by the toxicity value (e.g., RfD [Reference Dose] values usually are based on or have been adjusted to reflect exposure via drinking water, while the site medium of concern may be soil), an absorption adjustment may, on occasion, be appropriate. For example, a substance might be more completely absorbed following exposure to contaminated drinking water than

> following exposure to contaminated food or soil (e.g., if the substance does not desorb from soil in the gastrointestinal tract). (US EPA, 1989, p. A-3)

For arsenic in soil, EPA's default relative oral bioavailability of 0.6 (60%) was used (US EPA, 2012a). For COPCs other than arsenic (and lead; see Section 7.2), relative oral bioavailability information is not readily available; therefore, a relative bioavailability of 100% was used (Appendix C-1, Table 5.1).

*Soil Ingestion Rate ($IR_{soil}$).* EPA's default daily soil ingestion rate of 100 mg/day for an adult was used for the adult and adolescent Recreators, and an ingestion rate of 200 mg/day was used for the child Recreator (US EPA, 2014). These rates represent the upper-bound value for soil and dust ingestion (US EPA, 2014). For assessment of mutagenic compounds, a soil ingestion rate of 200 mg/day is used for the 0-2 years old and 2-6 years old age groups, and a rate of 100 mg/day is used for the 6-16 years old age group.

*Fraction of Soil from the Site (FS)*. While it is likely that only a portion of an individual's daily incidental soil ingestion occurs at the site, to be conservative, an assumption that 100% of the individual's daily soil exposure occurs at the site was used for all receptors.

*Exposure Frequency (EF) and Exposure Duration (ED)*. For the Recreator, the exposure frequency was 150 days/year, based on exposure on 3 days/week, for 50 weeks/year for passive recreation. The exposure duration is 6 years for the child Recreator, 10 years for the adolescent Recreator, and 26 years for the adult Recreator. For assessment of mutagenic compounds, exposure durations of 2, 4, and 10 years were used for the 0-2 years old, 2-6 years old, and 6-16 years old age groups, respectively.

*Body Weight (BW).* Based on EPA guidance (US EPA, 2014), a mean adult body weight of 80 kg (US EPA, 2011a, Table 8.3) was used for adult receptors in the HHRA. For adolescent receptors, the age-weighted mean body weight of 44 kg for an adolescent aged 6-16 years was used (US EPA, 2011a). For child receptors, a body weight of 15 kg for a child aged 0-6 years was used (US EPA, 2011a). For assessment of mutagenic compounds, the body weight is the age-weighted average body weight for each age group (US EPA, 2011a): 9 kg (0-2 years old), 17 kg (2-6 years old), and 44 kg (6-16 years old) (Appendix C-1, Table 4.5).

*Averaging Time (AT)*. For non-cancer hazards, the averaging time was equal to the exposure duration multiplied by 365 days/year. For cancer risks, exposures were averaged over a 70-year (25,550 days) average lifetime, consistent with EPA guidance (US EPA, 2014).

## Mutagenic Compounds

Cancer risks were calculated separately for carcinogens with mutagenic modes of action, to account for potentially increased susceptibility to mutagenic carcinogens for early life exposures (US EPA, 2005). Based on EPA guidance, a 10-fold adjustment was made for exposures during the first 2 years of life (0-2 years old age group), a 3-fold adjustment was made for the 2-6 years old and 6-16 years old age groups (US EPA, 2005). Intakes were calculated using exposure parameters specific to each age group (0-2 years old, 2-6 years old, and 6-16 years old). The age-adjusted exposure factors for chemicals with mutagenic modes of action are presented in Appendix C-1, Table 4.5.

For the incidental soil ingestion pathway, intake for mutagens is calculated as:

$$Intake\left(\frac{mg}{kg\cdot day}\right)=\frac{C_{soil}\left(\frac{mg}{kg}\right)\times IFSM_{adj}\left(\frac{mg\cdot yr}{kg\cdot day}\right)\times B\times FS\times EF\left(\frac{days}{yr}\right)\times 10^{-6}\,\frac{kg}{mg}}{AT(days)}$$

where $C_{soil}$, B, FS, EF, and AT are as defined above.

The age-adjusted mutagenic soil ingestion rate ($IFSM_{adj}$) for the child Recreator is given by:

$$IFSM_{adj}\left(\frac{mg\cdot yr}{kg\cdot day}\right)=\left(\frac{ED_{0-2}\times IRS_c\times 10}{BW_{0-2}}\right)+\left(\frac{ED_{2-6}\times IRS_c\times 3}{BW_{2-6}}\right)$$

where:

| | | |
|---|---|---|
| $IFSM_{adj}$ | = | Age-adjusted Mutagenic Soil Ingestion Rate (mg-year/kg-day) |
| $IRS_c$ | = | Child Soil Ingestion Rate (mg/day) |
| $IRS_a$ | = | Adult Soil Ingestion Rate (mg/day) |
| $ED_{(age)}$ | = | Exposure Duration for Age Range (years) |
| $BW_{(age)}$ | = | Average Body Weight for Age Range (kg) |

For the adolescent Recreator, intake for mutagens is calculated by multiplying the non-mutagenic intake by an age-dependent adjustment factor (ADAF) of 3.

### 7.1.2 Dermal Contact with Soil

For dermal exposure to contaminants in soil, dermal intake (the amount absorbed into the body) is calculated as (US EPA, 2004a):

$$DAD\left(\frac{mg}{kg\cdot day}\right)=\frac{C_{soil}\left(\frac{mg}{kg}\right)\times ABS\times AF\left(\frac{mg}{cm^2}\right)\times SA\left(\frac{cm^2}{event}\right)\times EF\left(\frac{events}{yr}\right)\times ED(yrs)\times 10^{-6}\,\frac{kg}{mg}}{BW(kg)\times AT(days)}$$

where:

| | | |
|---|---|---|
| DAD | = | Dermal Absorbed Dose (mg/kg-day) |
| $C_{soil}$ | = | Concentration of the Chemical in Soil (mg/kg) |
| ABS | = | Dermal Absorption Fraction (unitless) |
| AF | = | Soil to Skin Adherence Factor (mg/square centimeter [$cm^2$]) |
| SA | = | Skin Surface Area Exposed ($cm^2$/exposure event) |
| EF | = | Exposure Frequency (exposure events/year) |
| ED | = | Exposure Duration (years) |
| BW | = | Body Weight (kg) |
| AT | = | Averaging Time (days) |

The three parameters unique to the dermal exposure equation, the dermal absorption fraction (ABS), the soil to skin adherence factor (AF), and the skin surface area exposed (SA), are discussed in this section. The values used for other parameters are the same as discussed in Section 7.1.1.

*Dermal Absorption Fraction (ABS).* The dermal absorption fraction represents the amount of a chemical in contact with skin that is absorbed through the skin and into the bloodstream. The dermal absorption values were obtained from EPA's dermal risk assessment guidance (US EPA, 2004a, Exhibit 3.4). For arsenic, the dermal absorption fraction is 0.03; for cadmium, the dermal absorption fraction is 0.001; for PAH compounds, the dermal absorption fraction is 0.13; for other SVOCs, the dermal absorption fraction is 0.1; for Aroclor-1254/1260, the dermal absorption fraction is 0.14 (Appendix C-1, Table 5.1). Dermal absorption values are not available for the other COPCs; therefore, dermal exposure will not be calculated for these constituents in the HHRA.

*Soil to Skin Adherence Factor (AF).* The adherence factor represents the amount of soil that adheres to the skin per unit of skin surface area (US EPA, 2004a). Adherence factors vary depending on the properties of the soil, the part of the body, and the type of activity. EPA's recommended soil to skin adherence factor for the residential adult (0.07 mg/cm$^2$) used to calculate dermal absorption for adult and adolescent Recreators exposed to soil, and the soil to skin adherence factor for the residential child (0.2 mg/cm$^2$) was used to calculate dermal absorption for child Recreator (US EPA, 2014).

*Skin Surface Area Exposed (SA).* This parameter reflects the amount of skin that is available for exposure to soil. The skin surface area was 6,032 cm$^2$ for the adult Recreator, based on EPA's recommended value for an adult resident with exposed skin surface limited to the head, hands, forearms, lower legs, and feet (US EPA, 2014). The skin surface area was 4,639 cm$^2$ for the adolescent Recreator (US EPA, 2011a) and 2,373 cm$^2$ for the child Recreator (US EPA, 2014). For Recreator exposure to soil, this likely overestimates exposure, because it is likely that the Recreator would wear shoes when walking on the site. For assessment of mutagenic compounds, the following skin surface area values were used (Appendix C-1, Table 4.5): 1,954 cm$^2$ (0-2 years old), 2,591 cm$^2$ (2-6 years old), and 4,639 cm$^2$ (6-16 years old).

EPA assumes that VOCs in soil will volatilize before penetrating the skin. Thus, EPA does not provide default dermal absorption fraction values for VOCs (US EPA, 2004a). Therefore, dermal contact with VOCs in soil will not be evaluated in the risk assessment.

## Mutagenic Compounds

For the dermal contact pathway, intake for mutagens is calculated as:

$$DAD\left(\frac{mg}{kg\cdot day}\right)=\frac{C_{soil}\left(\frac{mg}{kg}\right)\times ABS\times DFSM_{adj}\left(\frac{mg-year}{kg-day}\right)\times EF\left(\frac{events}{yr}\right)\times 10^{-6}\,\frac{kg}{mg}}{AT(days)}$$

where DAD, $C_{soil}$, ABS, EF, and AT are as defined above, and where the age-adjusted mutagenic soil dermal contact factor ($DFSM_{adj}$) for the child Recreator is given by:

$$DFSM_{adj}\left(\frac{mg-year}{kg-day}\right)=\left(\frac{ED_{0-2}\times AF_c\times SA_{0-2}\times 10}{BW_{0-2}}\right)+\left(\frac{ED_{2-6}\times AF_c\times SA_{2-6}\times 3}{BW_{2-6}}\right)$$

where:

| | | |
|---|---|---|
| $DFSM_{adj}$ | = | Age-adjusted Mutagenic Soil Dermal Contact Factor (mg-year/kg-day) |
| $AF_c$ | = | Child Soil to Skin Adherence Factor (mg/cm$^2$) |
| $AF_a$ | = | Adult Soil to Skin Adherence Factor (mg/cm$^2$) |
| $SA_{(age)}$ | = | Skin Surface Area Exposed for Age Range (cm$^2$/day) |
| $ED_{(age)}$ | = | Exposure Duration for Age Range (years) |
| $BW_{(age)}$ | = | Body Weight for Age Range (kg) |

For the adolescent Recreator, the intake for mutagens is calculated by multiplying the intake for non-mutagens by an ADAF of 3.

### 7.1.3 Inhalation of Particulates and VOCs from Soil

For inhalation of particulates and VOCs generated from soil, the average daily exposure is calculated as (US EPA, 2002, 2009a):

$$EC\left(\frac{mg}{m^3}\right)=\frac{C_{air}\left(\frac{mg}{m^3}\right)\times ET\left(\frac{hr}{d}\right)\times EF\left(\frac{d}{yr}\right)\times ED(yr)\times\frac{1d}{24hr}}{AT(d)}$$

where:

| | | |
|---|---|---|
| EC | = | Exposure Concentration (mg/cubic meter [m$^3$]) |
| $C_{air}$ | = | Concentration of the Chemical in Air (mg/m$^3$) |
| ET | = | Exposure Time (hours/day) |
| EF | = | Exposure Frequency (days/year) |
| ED | = | Exposure Duration (years) |
| AT | = | Averaging Time (days) |

The parameters unique to the inhalation exposure equation, concentration of chemical in air ($C_{air}$) and exposure time (ET), are discussed in this section. The values for other parameters are the same as discussed in Section 7.1.1.

*Concentration of Chemical in Air ($C_{air}$).* The concentration of a substance in air was determined with the volatilization factor (VF) and the particulate emissions factor (PEF), using the following equation:

$$C_{air}=C_{soil}\times\left(\frac{1}{VF}+\frac{1}{PEF}\right)$$

where:

$C_{air}$ = Concentration of the Chemical in Air (mg/m$^3$)
$C_{soil}$ = Concentration of the Chemical in Soil (mg/kg)
VF = Volatilization Factor (m$^3$ air/kg soil)
PEF = Particulate Emissions Factor (m$^3$ air/kg soil)

The chemical-specific VFs were calculated using the RSL calculator (US EPA, 2017a) and the same assumptions as the PEF calculations discussed below. The chemical-specific VFs used in the air concentration calculations are presented in Appendix C-1, Table 3.2.

The EPA default PEF of 3.2 × 10$^9$ m$^3$ air/kg soil for Philadelphia, Pennsylvania, was selected as the most representative of conditions in the Gibbsboro/Voorhees, New Jersey, area (US EPA, 2017a). The derivation of the PEF is presented below. The PEF was calculated based on meteorological conditions within Climatic Zone VIII, which includes the state of New Jersey (US EPA, 1996). Of the three cities with specific meteorological information available within Climatic Zone VIII, Philadelphia, Pennsylvania, was selected as the most representative of conditions in the Gibbsboro/Voorhees, New Jersey, area (US EPA, 1996).

The PEF was calculated using the following equations:

$$PEF\left(\frac{m^3}{kg}\right) = Q/C \times \frac{3{,}600\,\text{sec}/\,hr}{0.036\times(1-V)\times(U_m/U_t)^3\times F(x)}$$

$$Q/C = A\times\exp\left[\frac{(\ln A_s - B)^2}{C}\right]$$

where:

Q/C = Dispersion Factor for Fugitive Dusts Emitted from Soils
V = Fraction of Vegetative Cover (unitless)
$U_m$ = Mean Annual Windspeed (meters per second [m/s])
$U_t$ = Equivalent Threshold Value of Windspeed at 7 m (m/s)
F(x) = Function Dependent on $U_m/U_t$ (unitless)
$A_s$ = Area of Site (acres)
A = PEF Dispersion Constant A (unitless)
B = PEF Dispersion Constant B (unitless)
C = PEF Dispersion Constant C (unitless)

*Dispersion Factor or Fugitive Dusts Emitted from Soils (Q/C).* Calculated using Equation D-1 from EPA (2002) (87.36898 g/m$^2$-s per kg/m$^3$).

*Fraction of Vegetative Cover (V).* The PEF was calculated using the default vegetation coverage of 50% or 0.5.

*Mean Annual Windspeed ($U_m$)*, *Equivalent Threshold Value of Windspeed at 7 m ($U_t$)*, *Function Dependent on $U_m/U_t$ (F[x]).* The mean annual windspeed (4.29 m/s), the equivalent threshold value of windspeed at 7 m (11.32 m/s), and the function dependent on $U_m/U_t$ (0.0993) were selected based on values listed for Philadelphia, Pennsylvania (US EPA, 1996, Table 2).

*Area of Site ($A_s$).* Area is the default of 0.5 acre.

*PEF Dispersion Constants (A*, *B*, *C).* These constants were derived using dispersion modeling and meteorological data for each of the 29 cities representing the various climatic zones across the United States (US EPA, 2002). The dispersion constants (A = 14.0111, B = 19.6154, and C = 225.3397) for Philadelphia, Pennsylvania, were selected as the most representative geographic location (US EPA, 2002, Exhibit D-2).

*Exposure Time (ET).* Exposure time is the amount of time a receptor is exposed to soil particulates in the air. Recreators (adult and child) are conservatively assumed to be exposed to soil particulates while on-site for 8 hours/day, based on professional judgment.

### Mutagenic Compounds

For the inhalation pathway, the exposure concentration for mutagens is calculated as:

$$EC = C_{air} \times IF_{adj}$$

where the age-adjusted intake factor ($IF_{adj}$, unitless) for the child Recreator is given by:

$$IF_{adj} = \frac{EF \times ET}{AT} \times \left[(ED_{0-2} \times 10) + (ED_{2-6} \times 3)\right]$$

For the adolescent Recreator, intake for mutagens is calculated by multiplying the intake for non-mutagens by an ADAF of 3.

## 7.1.4 Incidental Ingestion and Dermal Contact with Sediment

For the sediment incidental ingestion and dermal exposure pathways, intake was calculated using the same equation and parameters used to calculate soil incidental ingestion (Section 7.1.1) and dermal exposure (Section 7.1.2). Several parameters used in these equations have different assumptions from those used to determine soil exposure: concentration of the chemical in sediment ($C_{sediment}$), skin surface area exposed (SA), bioavailability (B), sediment to skin adherence factors (AF), and exposure frequency (EF), as discussed below.

*Concentration of the Chemical in Sediment ($C_{sediment}$).* The lower of either the 95% UCLM or the maximum detected concentration in sediment was used as the EPC.

*Relative Bioavailability (B).* Sediment-specific relative bioavailability values are not available. In the absence of sediment specific values, soil bioavailability was applied, assuming the bioavailability is the same in sediment as it is in soil.

*Sediment Ingestion Rate ($IR_{sediment}$).* Sediment ingestion rates for the child, adolescent, and adult Recreators, as well as for mutagenic compounds, were the same as the values used for soil ingestion (Section 7.1.1). Sediment ingestion rates for the child, adolescent, and adult Swimmers were the same as those used for the child, adolescent, and adult Recreators, respectively.

*Skin Surface Area Exposed (SA).* This parameter reflects the amount of skin that is available for exposure to sediment. For the wading scenarios, to be consistent with soil exposure, the skin surface area is 6,032 $cm^2$ for the adult Recreator, 4,639 $cm^2$ for the adolescent Recreator, and 2,373 $cm^2$ for the child Recreator (US EPA, 2011, 2014). Skin surface area exposed to sediment for the child, adolescent, and adult Swimmers was the same as the values used for the child, adolescent, and adult Recreators, respectively. Exposed skin is assumed to include the head, hands, forearms, lower legs, and feet (US EPA, 2014). For assessment of mutagenic compounds, the following skin surface area values were used (Appendix C-1, Table 4.5): 1,954 $cm^2$ (0-2 years old), 2,591 $cm^2$ (2-6 years old), and 4,639 $cm^2$ (6-16 years old).

*Sediment to Skin Adherence Factor (AF).* EPA's recommended soil to skin adherence factor for a residential child (0.2 $mg/cm^2$) (US EPA, 2014) was used to represent contact with sediment for all six Recreator and Swimmer receptors.

*Exposure Frequency (EF)*. The Recreators in the wading scenario are assumed to contact sediment at the site 2 days/week during the 5 warmest months of the year (May through September), for a total of 44 days/year. The Swimmer at SL, BWL, and KWL is assumed to contact sediment on days that he or she swims, which is assumed to be 105 days/year, based on the number of days with temperatures above 80°F and precipitation of less than 1 inch (NOAA, 2004-2015).

### 7.1.5 Incidental Ingestion of Surface Water

Surface water could potentially be incidentally ingested while swimming in SL, BWL, and KWL. For surface water ingestion, intake is calculated as:

$$Intake\left(\frac{mg}{kg \cdot day}\right) = \frac{C_{sw}\left(\frac{mg}{L}\right) \times IR_{sw}\left(\frac{L}{day}\right) \times EF\left(\frac{day}{yr}\right) \times ED(yrs)}{BW(kg) \times AT(days)}$$

where:

$C_{sw}$ = Concentration of the Chemical in Surface Water (mg/L)
$IR_{sw}$ = Surface Water Ingestion Rate (L/day)
EF = Exposure Frequency (days/year)
ED = Exposure Duration (years)
BW = Body Weight (kg)
AT = Averaging Time (days)

Concentration of the chemical in surface water ($C_{sw}$), surface water ingestion rate ($IR_{sw}$), and exposure frequency (EF) are discussed below. The values used for other parameters are the same as discussed in Section 7.1.1.

*Concentration of the Chemical in Surface Water ($C_{sw}$).* The lower of either the 95% UCLM or the maximum detected concentration in surface water was used as the EPC.

*Surface Water Ingestion Rate ($IR_{sw}$).* The surface water ingestion rate was based on EPA's recommended reasonable maximum exposure (RME) values for water ingestion while swimming: 120 mL/hour for the child and 71 mL/hour for the adult and adolescent (US EPA, 2011a). The exposure time while swimming was calculated based on the 50th percentile value for time spent outdoors at a pool/river/lake reported in the Exposure Factors Handbook (US EPA, 2011a). The Exposure Factors Handbook (Table 16-20) lists values broken down into the following age groups: 0-1 years old, 1-4 years old, 5-11 years old, 12-17 years old, 18-64 years old, and >64 years old. The values for the child and adolescent were calculated using an age-weighted approach. The resultant values are 2.74 hours/day for a child,[14] 2 hours/day for an adolescent, and 2.5 hours/day for an adult. Combining these values gives ingestion rates of 0.33, 0.14, and 0.18 L/day for the child, adolescent, and adult, respectively.

*Exposure Frequency (EF).* The child, adolescent, and adult Swimmers at the three lakes are assumed to swim 105 days per year. This is based on the average number of days annually from 2004-2015 on which the temperature was greater than 80°F and the precipitation was less than 1 inch (NOAA, 2004-2015).

## Mutagenic Compounds

For the surface water ingestion pathway, the intake for mutagens was calculated as:

$$Intake\left(\frac{mg}{kg\cdot day}\right)=\frac{C_{sw}\left(\frac{mg}{L}\right)\times IFWM_{adj}\left(\frac{L}{Kg}\right)}{AT(days)}$$

where the age-adjusted mutagenic intake factor ($IFWM_{adj}$) for the child Swimmer is given by:

$$IFWM_{adj}\left(\frac{L}{kg}\right)=\left(\frac{EF_{0-2}\times ED_{0-2}\times IR_{sw0-2}\times 10}{BW_{0-2}}\right)+\left(\frac{EF_{2-6}\times ED_{2-6}\times IR_{sw2-6}\times 3}{BW_{2-6}}\right)$$

where:

| | | |
|---|---|---|
| $IFWM_{adj}$ | = | Age-adjusted Mutagenic Surface Water Intake Factor (L/kg) |
| $EF_{(age)}$ | = | Exposure Frequency for Age Range (days/year) |
| $ED_{(age)}$ | = | Exposure Duration for Age Range (years) |
| $IR_{sw(age)}$ | = | Surface Water Ingestion Rate for Age Range (L/day) |
| $BW_{(age)}$ | = | Body Weight for Age Range (kg) |

For the adolescent Swimmer, intake for mutagens is calculated by multiplying the intake for non-mutagens by an ADAF of 3.

[14] The age range for the child is 0-6 years. Table 16-20 reports the 50th percentile time spent outdoors at a pool/river/lake as 168 min/day for ages 1-4 years, and 145 min/day for ages 5-11 years. The exposure time for the child receptor is calculated as [(168 min/day x 5 years + 145 min/day x 1 year) / 6 years] = 164.2 min/day = 2.74 hours/day.

### 7.1.6 Dermal Contact with Surface Water

For dermal exposure to contaminants in surface water, a dermal absorbed dose (DAD) was calculated according to the recommended equations in EPA's Supplemental Guidance for Dermal Risk Assessment (US EPA, 2004a).

$$DAD\left(\frac{mg}{kg\cdot day}\right)=\frac{DA_{event}\left(\frac{mg}{cm^2-event}\right)\times SA\left(cm^2\right)\times EV\left(\frac{event}{day}\right)\times EF\left(\frac{days}{yr}\right)\times ED\left(yrs\right)}{BW\left(kg\right)\times AT\left(days\right)}$$

where:

| | | |
|---|---|---|
| DAD | = | Dermal Absorbed Dose (mg/kg-day) |
| $DA_{event}$ | = | Absorbed Dose per Event (mg/cm$^2$-event) |
| EV | = | Event Frequency (events/day) |
| SA | = | Skin Surface Area Exposed (cm$^2$) |
| EF | = | Exposure Frequency (exposure events/year) |
| ED | = | Exposure Duration (years) |
| BW | = | Body Weight (kg) |
| AT | = | Averaging Time (days) |

The absorbed dose per event ($DA_{event}$) from surface water dermal contact was calculated using the EPA equations (US EPA, 2004a) presented below. For inorganics in water, the $DA_{event}$ was calculated using the dermal permeability coefficient of a compound in water (Kp), accounting for the event duration ($t_{event}$). For organics in water, EPA uses a mathematical model to predict absorption from exposures to water. Compounds for which there are sufficient data to predict dermal absorption with acceptable confidence are said to be within the model's "effective predictive domain" (EPD). There is significant uncertainty associated with the evaluation of dermal absorption for highly lipophilic chemicals that fall outside the EPD. Six compounds identified as COPCs in surface water – benzo(a)anthracene, benzo(a)pyrene, benzo(b) fluoranthene, bis(2-ethylhexyl)phthalate, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene – fall outside the EPD. EPA provides guidance on the quantification of dermal risk from chemicals in water that fall outside the EPD (US EPA, 2004a). Therefore, although there is low confidence in the dermal permeability coefficient values for chemicals outside the EPD, dermal risk was calculated for the COPCs that are outside the EPD (US EPA, 2017c).

#### Calculation of Absorbed Dose per Event ($DA_{event}$)

For inorganics:

$$DA_{event}\left(\frac{mg}{cm^2\cdot event}\right)=C_{sw}\left(\frac{mg}{L}\right)\times Kp\left(\frac{cm}{hr}\right)\times t_{event}\left(\frac{hr}{event}\right)\times 0.001\frac{L}{cm^3}$$

where:

$C_{sw}$ = Concentration of the Chemical in Surface Water (mg/L)
Kp = Dermal Permeability Coefficient of Compound in Water (centimeters [cm]/hour)
$t_{event}$ = Event Duration (hours/event)

For organics, the absorbed dose per event calculation depends on whether the chemical reaches steady state within the event duration, as presented in the equations below.

**Non-steady State ($t_{event} \leq t^*$)**

Where the event duration ($t_{event}$) is less than or equal to the time to reach steady state (t*):

$$DA_{event}\left(\frac{mg}{cm^2 \cdot event}\right) = 2 \times FA \times C_{sw}\left(\frac{mg}{L}\right) \times Kp\left(\frac{cm}{hr}\right) \times \sqrt{\frac{6 \times \tau_{event}\left(\frac{hr}{event}\right) \times t_{event}\left(\frac{hr}{event}\right)}{\pi}}$$

**Steady State ($t_{event} > t^*$)**

Where the event duration ($t_{event}$) is greater than the time to reach steady state (t*):

$$DA_{event}\left(\frac{mg}{cm^2 \cdot event}\right) = FA \times C_{sw}\left(\frac{mg}{L}\right) \times Kp\left(\frac{cm}{hr}\right) \times \left[\left(\frac{t_{event}\left(\frac{hr}{event}\right)}{(1+B)}\right) + 2 \times \tau_{event}\left(\frac{hr}{event}\right) \times \left(\frac{1+3B+3B^2}{(1+B)^2}\right)\right]$$

where:

FA = Fraction Absorbed (unitless)
$C_{sw}$ = Concentration of the Chemical in Surface Water (mg/L)
Kp = Dermal Permeability Coefficient of Compound in Water (cm/hour)
$\tau_{event}$ = Lag Time (hours/event)
$t_{event}$ = Event Duration (hours/event)
B = Ratio of Permeability of Chemical in Stratum Corneum to Permeability in Viable Epidermis (unitless)

The fraction absorbed and dermal permeability coefficient values were obtained from the chemical-specific parameters used to calculate the EPA RSLs (US EPA, 2017b).

The other various factors were calculated with the following equations.

**Permeability Factor (B)**

$$B = Kp\left(\frac{cm}{hr}\right) \times \left(\frac{MW\left(\frac{g}{mole}\right)^{1/2}}{2.6}\right)$$

**Steady State Time Constant (t*)**

If B ≤ 0.6:

$$t^*(hr) = 2.4 \times \tau_{event}\left(\frac{hr}{event}\right)$$

If B > 0.6:

$$t^*(hr) = \sqrt{b - (b^2 - c^2)} \times \left(\frac{l_{sc}^2\ (cm)}{D_{sc}\left(\frac{cm^2}{hr}\right)}\right)$$

**Factors "c" and "b"**

$$c = \left(\frac{1 + 3B + 3B^2}{3(1+B)}\right)$$

$$b = \left(\frac{2(1+B)^2}{\pi}\right) - c$$

**Lag Time ($\tau$ event)**

$$\tau_{event}\left(\frac{hr}{event}\right) = \frac{l_{sc}^2(cm)}{6D_{sc}\left(\frac{cm^2}{hr}\right)}$$

**Effective Diffusivity (Dsc)**

$$D_{sc}\left(\frac{cm^2}{hr}\right) = 10^{-2.8-(0.0056MW\left(\frac{g}{mole}\right))} \times l_{sc}(cm)$$

where:

$\tau_{event}$ = Lag Time (hours/event)
t* = Time to Reach Steady State (hours)
B = Ratio of Permeability of Chemical in Stratum Corneum to Permeability in Viable Epidermis (unitless)
b,c = Correlation Coefficients, which have been fitted to the Flynn data (unitless)
$l_{sc}$ = Skin Thickness (cm)
MW = Molecular Weight (g/mole)
$D_{sc}$ = Effective Diffusion Coefficient for Chemical Transfer Through the Stratum Corneum ($cm^2$/hour)

The surface water absorbed dose per event values are presented in Appendix C-1, Table 4.6.

The exposure parameters that are specific to the surface water dermal pathway are discussed below.

*Concentration of the Chemical in Surface Water ($C_{sw}$).* The lower of either the 95% UCLM or the maximum detected concentration in surface water was used as the EPC.

*Skin Surface Area Exposed (SA).* This parameter reflects the amount of skin that is available for exposure to surface water. For the wading scenarios, to be consistent with sediment exposure, the skin surface area is 6,032 $cm^2$ for the adult Recreator, 4,639 $cm^2$ for the adolescent Recreator, and 2,373 $cm^2$ for the child Recreator (US EPA, 2011a, 2014). For the future Swimmer in SL, BWL, and KWL, a whole-body surface area of 6,365 $cm^2$ was used for the child, 13,350 $cm^2$ was used for the adolescent, and 19,652 $cm^2$ was used for the adult (US EPA, 2011a, 2014). For assessment of mutagenic compounds for a Recreator (wader), the following skin surface area values were used (Appendix C-1, Table 4.5): 1,954 $cm^2$ (0-2 years old), 2,591 $cm^2$ (2-6 years old), and 4,639 $cm^2$ (6-16 years old). For assessment of mutagenic compounds for a Swimmer, the following skin surface area values were used (Appendix C-1, Table 4.5): 4,463 $cm^2$ (0-2 years old), 7,225 $cm^2$ (2-6 years old), and 13,350 $cm^2$ (6-16 years old).

*Event Duration ($t_{event}$).* Recreators were assumed to wade for 1 hour per event, based on professional judgment. The exposure time while swimming was the 50$^{th}$ percentile value for time spent outdoors at a pool/river/lake: 2.74 hours/day for a child, 2 hours/day for an adolescent, and 2.5 hours/day for an adult (US EPA, 2011a).

*Exposure Frequency (EF)*. The Recreator is assumed to contact surface water at the site 2 days/week during the 5 warmest months of the year (May through September). This yields an exposure frequency of 44 days/year. The child, adolescent, and adult Swimmers in SL, BWL, and KWL are assumed to contact surface water 105 days/year, based on the number of days with temperatures above 80°F and precipitation of less than 1 inch (NOAA, 2004-2015). This equates to an exposure of 7 days/week for 15 weeks.

**Mutagenic Compounds**

For the dermal contact pathway, the DAD for mutagens was calculated as:

$$DAD\left(\frac{mg}{kg\cdot day}\right)=\frac{DA_{event}\left(\frac{mg}{cm^2-event}\right)\times DFWM_{adj}\left(\frac{events\cdot cm^2}{kg}\right)}{AT(days)}$$

where the age-adjusted mutagenic surface water dermal contact factor ($DFWM_{adj}$) for the child Swimmer and Recreator is given by:

$$DFWM_{adj}\left(\frac{events\cdot cm^2}{kg}\right)=\left(\frac{EV_{0-2}\times EF_{0-2}\times ED_{0-2}\times SA_{0-2}\times 10}{BW_{0-2}}\right)+\left(\frac{EV_{2-6}\times EF_{2-6}\times ED_{2-6}\times SA_{2-6}\times 3}{BW_{2-6}}\right)$$

where:

$DFWM_{adj}$ = Age-adjusted Mutagenic Surface Water Dermal Contact Factor (events-$cm^2$/kg)
$EV_{(age)}$ = Event Frequency for Age Range (events/day)
$EF_{(age)}$ = Exposure Frequency for Age Range (days/year)
$ED_{(age)}$ = Exposure Duration for Age Range (years)
$SA_{(age)}$ = Surface Area Exposed to Surface for Age Range ($cm^2$/day)
$BW_{(age)}$ = Body Weight for Age Range (kg)

For the adolescent Swimmer and Recreator, intake for mutagens is calculated by multiplying the intake for non-mutagens by an ADAF of 3.

### 7.1.7 Ingestion of Fish

For the ingestion of sport-caught fish, intake is calculated as:

$$Intake\left(\frac{mg}{kg\cdot day}\right)=\frac{C_f\left(\frac{mg}{kg}\right)\times IR_f\left(\frac{kg}{day}\right)\times EF\left(\frac{days}{yr}\right)\times ED(yr)}{BW(kg)\times AT(days)}$$

where:

$C_f$ = Concentration of the Chemical in Fish (mg/kg)
$IR_f$ = Fish Ingestion Rate (kg/day)
EF = Exposure Frequency (days/year)
ED = Exposure Duration (years)
BW = Body Weight (kg)
AT = Averaging Time (days)

The basis for the input values is detailed below.

*Concentration of the Chemical in Fish ($C_f$).* The lower of either the 95% UCLM or the maximum detected concentration in fish is used as the EPC.

**Inorganic Arsenic.** The fish were analyzed for total arsenic; however, most of the arsenic in fish is in the form of organic arsenic, predominantly arsenobetaine, which is virtually non-toxic to humans. Because the arsenic toxicity factors are based on inorganic arsenic, the HHRA used an estimate of 10% inorganic arsenic in fish. A 1996 study of fish in the Columbia River reported a mean of 6.5% inorganic arsenic for all composite samples, with an average ranging from 0.5% in carp to 9.2% in sturgeon (US EPA Region X, 2002). A study of fish tissue in the Willamette River found that an average of 4.2% of the arsenic in carp (whole body) and 3.8% of the arsenic in bass (fillet) was inorganic arsenic (US EPA Region X, 2002). Schoof and Yager (2007, Table 3) reported that in 38 samples of freshwater finfish from five studies, the percentage of inorganic arsenic was 7.2% (mean) and 10% ($75^{th}$ percentile). In summary, inorganic arsenic in fish is generally 10% or less of the total arsenic. Therefore, the inorganic arsenic concentration in fish tissue was estimated by multiplying the total arsenic concentration by 10%, and this value was used to estimate arsenic risks in the HHRA.

*Fish Ingestion Rate ($IR_f$).* The RME fish ingestion rates were 26 g/day for the adult, 17 g/day for the adolescent, and 9 g/day for the child. The ingestion rate of 26 g/day is the $95^{th}$ percentile for a recreational freshwater angler and is based on the average $95^{th}$ percentile from three studies in Maine, New York, and Michigan (US EPA, 1997). This value equates to approximately 42 (8 ounce) fish meals per year. The fish ingestion rates for the adolescent and child were estimated as about two-thirds and one-third that of an adult, to yield 17 g/day and 9 g/day, respectively.

*Exposure Frequency (EF).* The fish ingestion rate represents an average daily consumption rate for the whole year; thus, the exposure frequency was 365 days/year.

*Exposure Duration (ED)*. The exposure duration is 6 years for the child, 10 years for the adolescent, and 26 years for the adult Angler.

*Body Weight (BW).* Based on EPA guidance (US EPA, 2014), a mean adult body weight of 80 kg (US EPA, 2011a, Table 8.3) was used for the adult, 44 kg was used for the adolescent, and 15 kg was used for the child.

*Averaging Time (AT)*. For non-cancer hazards, the averaging time was equal to the exposure duration multiplied by 365 days/year. For cancer risks, exposures were averaged over a 70-year (25,550 days) average lifetime, consistent with EPA guidance (US EPA, 2014).

## 7.2 Adult Lead Model

Current knowledge of lead pharmacokinetics indicates that risk values derived by the standard risk methodology would not provide an accurate indication of potential risk; therefore, EPA has not yet established toxicity criteria for lead (US EPA, 2004b). Consequently, lead risks were evaluated using blood lead models, which predict BLLs based on the total lead intake from various environmental media. Lead risks for non-residential adults were assessed using EPA's ALM (US EPA, 2003a, 2009b, 2017c). The ALM predicts a median BLL estimate for an adult as a function of the baseline BLL plus an increment that is attributable to exposure to site soil (US EPA, 2003a). This increment is a function of the biokinetic slope factor (BKSF), the concentration of lead in soil, the soil ingestion rate, the fraction of lead in soil that is absorbed, and the exposure frequency.

EPA guidance sets a target BLL for an adult female in order to protect a developing fetus, with the goal that the fetus should have no more than a 5% probability of exceeding the target BLL (US EPA, 2003a). The age of the adult receptor is different for lead than for other non-lead COPCs. For evaluation of lead, EPA considers the appropriate adult receptor to be a woman of child-bearing age (US EPA, 2003a).

The basic form of the equation for the ALM is as follows:

$$BLL_{adult} = PbB + \frac{(EF \times AbsF \times PbS \times IR \times BKSF)}{AT}$$

where:

| | | |
|---|---|---|
| BLL | = | Blood Lead Level, predicted by model (µg/dL) |
| PbB | = | GM Baseline BLL (µg/dL), for adult females (aged 18-45 years) |
| EF | = | Exposure Frequency (days/year) |
| AbsF | = | Absorption Fraction (dimensionless) |
| PbS | = | Soil Lead Concentration (µg/g) |
| IR | = | Soil Ingestion Rate (g/day) |
| BKSF | = | Biokinetic Slope Factor (µg/dL per µg/day) |
| AT | = | Averaging Time (days/year) |

The input values used in the model are summarized in Table 8 and described below. First, an average baseline lead concentration in blood for adults is identified to account for continuing exposure to background levels of lead in food, soil, and dust, and pre-existing body burdens due to prior lead exposures. Baseline BLLs were obtained from EPA (2017c) and are based on the most recent data from National Health and Nutrition Examination Surveys (NHANES) from 2009-2014. For adults, the GM and geometric standard deviation (GSD) BLLs for women of childbearing age (ages 18-45 years), where the GM is 0.6 µg/dL and the GSD is 1.8, were used to reflect the most current data. To this baseline, the model adds the incremental increase in blood lead due to the lead source of interest (in this case, exposure to lead *via* incidental ingestion of soil or sediment).

The ALM was used to assess lead risks for the adult and adolescent Recreator and Swimmer. Lead was identified as a COPC in all media except for SL surface water. The Recreator was exposed to soil and sediment, and the Swimmer was exposed to sediment. The ALM does not include a water component; thus, surface water lead ingestion was evaluated only for the child Swimmer. However, this is considered protective of the adult receptor. The concentration of lead in soil was the arithmetic mean lead concentration (*i.e.*, EPC) in each exposure area. Lead uptake on a daily basis is calculated by multiplying the concentration of lead in soil by the soil ingestion rate and the absorption fraction for lead in soil. The absorption fraction is the amount of lead that is absorbed into the bloodstream from the GI tract. The exposure frequency varies by receptor and exposure area.

To evaluate lead risk, exposure frequencies were identical to that used to evaluate risk for the non-lead COPCs. The Swimmer has an exposure frequency of 105 days/year. The swimming is assumed to occur during the warmest period of the year (May 15 to September 15); thus, the averaging time is 120 days. The Recreator has an exposure of 150 days/year, and the averaging time for the Recreator is assumed to be 1 year (*i.e.*, 365 days). The BKSF relates the incremental

lead uptake into the body to an incremental increase in BLL in adults. EPA's default value of 0.4 was used for the BKSF.

The soil and sediment ingestion rates for the Recreator were assumed to be 0.05 g/day, to reflect central tendency estimates. The sediment ingestion rate for the Swimmer was also assumed to be 0.05 g/day. The exposure inputs used in a lead risk assessment should be central tendency estimates, not upper-bound estimates, because the blood lead model predicts a GM BLL and the GSD is used to calculate the upper-bound estimated (95$^{th}$ percentile) BLL. This is the reason that the values for some exposure parameters differ for non-lead COPC and lead risk assessments.

The adult Swimmer was not evaluated for surface water ingestion for lead, because this exposure pathway is not included in EPA's ALM, and surface water ingestion is evaluated for the child Swimmer, who is considered a more sensitive receptor.

The adult Recreator was assumed to be exposed to soil 150 days/year and also to sediment for 44 of the 150 days/year he visits the site. Therefore, the EPC used in the lead model was a weighted mean concentration for soil and sediment.[15] The SL Recreator is exposed only to sediment while wading; thus, the exposure frequency for this receptor is 44 days/year, and the averaging time for this receptor is 150 days, based on the 5 months (May to September) during which wading is assumed to occur. The lead EPCs are presented in Appendix C-1, Table 3.4.

For lead, EPA recommends an oral absorption factor for adults of 0.12 for ingestion of lead in soil, based on 20% absorption of soluble lead, and a relative bioavailability of 60% for lead in soil (*i.e.*, 0.12 = 0.2 × 0.6) (US EPA, 2003a). The recommended EPA absorption factor of 0.12 was used to evaluate ingestion of lead from soil or sediment.

The ALM was used to assess lead risks for the adult Angler eating fish caught from KWL. Lead risk for the adult Angler includes both ingestion of soil/sediment, and consumption of fish, as shown in the following equation (US EPA, 2018a):

$$BLL_{adult} = PbB + \frac{Pb_S \times EF_S \times IR_S \times AbsF_S \times BKSF}{AT_S} + \frac{Pb_F \times EF_F \times IR_F \times AbsF_F \times BKSF}{AT_F}$$

where:

| | | |
|---|---|---|
| BLL | = | Blood Lead Level, predicted by model (µg/dL) |
| PbB | = | GM Baseline BLL (µg/dL), for adult females (aged 18-45 years) |
| $EF_i$ | = | Exposure Frequency (days/year) |
| $AbsF_i$ | = | Absorption Fraction (dimensionless) |
| $Pb_i$ | = | Lead Concentration (µg/g) |
| $IR_i$ | = | Ingestion Rate (g/day) |
| BKSF | = | Biokinetic Slope Factor (µg/dL per µg/day) |
| $AT_i$ | = | Averaging Time (days/year) |
| Subscript | = | Medium (soil/sediment [s], fish [f]) |

[15] The weighted mean was calculated as ([soil EPC × 150 days/year] + [sediment EPC × 44 days/year])/(150 days/year). An alternative soil/sediment weighting scheme is discussed in Section 10.1.2.

The concentration of lead in fish was the arithmetic mean lead concentration (*i.e.*, EPC). The fish ingestion rate of 26 g/day was used, consistent with non-lead COPCs. The exposure frequency for fish ingestion was 365 days/year, and the averaging time was assumed to be 1 year (*i.e.*, 365 days). The oral absorption factor for this exposure pathway was calculated to be 0.20, based on 20% absorption of soluble lead and a relative bioavailability of 100% for dietary lead (US EPA, 2003a). For the soil/sediment component of the equation, the input parameters for the KWL Recreator, including EPC, EF, and AbsF, were used.

Total BLLs for adults are predicted by adding the estimated incremental increase in blood lead to the average baseline BLL. A GSD appropriate for adults was used to estimate the probable range of BLLs around the predicted GM adult BLL from the model. For this evaluation, EPA's recommended baseline BLL of 0.6 µg/dL and a GSD of 1.8 were used (US EPA, 2017c).

BLLs estimated using the ALM were evaluated based on a comparison to the EPA's risk management criterion for lead. EPA's health protection goal is for a developing fetus to have no more than a 5% probability of exceeding the target BLL (US EPA, 2003a). The adult and adolescent lead risks were expressed as the probability of having a fetal blood lead above 5 µg/dL, with a probability goal of less than or equal to 5%. This goal is based on protecting the fetus of a pregnant receptor.

## 7.3 IEUBK Model

Lead risks for children were assessed using an EPA blood lead model known as the IEUBK model (US EPA, 1994a, 2010b). The IEUBK model is a computer-based model that estimates the blood lead concentration in children resulting from their exposure to lead in soil, dust, drinking water, diet, and air. Specifically, the model estimates the intake and uptake of lead into the body and then uses biokinetic modeling to predict BLLs. Because of variations in behavior and physiology among individual children, different children will have different BLLs, even if they are exposed to the same environment. The IEUBK model addresses this by treating its central estimate of blood lead concentration (averaged over childhood from ages 1-6 years)[16] as a GM of a log-normal distribution among similarly exposed children. EPA's default GSD of 1.6 is used to calculate the proportion of children in the variable population with BLLs falling above 5 µg/dL. Child lead risks are presented as the probability of having a blood lead above 5 µg/dL, consistent with the target BLL used for the ALM and at the direction of EPA.

The input values used in the IEUBK model are presented in Table 9. Certain parameters have input values that vary with age; these are listed as a range in Table 9. The IEUBK model assumes that an individual's total daily soil ingestion is based on 45% soil and 55% house dust. EPA's recommended weighting factors of 45% soil and 55% dust were used for the child Recreator and Swimmer.[17] In the absence of site-specific air concentrations, dietary lead intake, drinking water concentration, and soil ingestion rate, default assumptions were used (Table 9). US EPA's recommended maternal blood concentration of 0.6 µg/dL was used (US EPA, 2017c). For the

[16] Note that the age of the child receptor for evaluation of lead risk is slightly different than for the non-lead COPCs; the IEUBK model uses a child aged 1-6 years, while the non-lead risks use 0-6 years for the child. The current IEUBK age range recommendation was issued in in US EPA Office of Land and Emergency Management (OLEM) Directive 9200.2-177 (US EPA, 2017d).

[17] This assumption is consistent with that used in the FMP HHRA for the child Resident and child Recreator. Soil and sediment in recreational areas is expected to be ingested by a child both while on-site and later once it is carried home on shoes and clothing and mixed with house dust.

IEUBK model, soluble lead is estimated to be 50% bioavailable in food and water and 30% bioavailable in soil and dust (US EPA, 2007a).

The lead EPCs for soil and sediment are presented in Appendix C-1, Table 3.4. The child Recreator is assumed to be exposed to soil 150 days/year and also to sediment for 44 of the 150 days they visit the site. Therefore, the EPC used in the lead model was a weighted mean concentration for soil and sediment.[18] Although the child Recreator is assumed to have the 150 days of exposure over the course of a year (*i.e.*, 3 days/week, for 50 weeks/year), the IEUBK model was run for the child Recreator in BWL, HC, and KWL with no adjustment for exposure frequency. The child Recreator in SL is exposed only to sediment (soil adjacent to SL was assessed in the FMP HHRA) on 44 of the 150 days. This adjustment was made in the IEUBK model by applying a 44/150 factor to the soil EPC, which is equivalent to assuming a 150-day averaging time. Using this adjustment distinguishes the blood lead results for the child Recreator from the child Swimmer. Without this adjustment, these two receptors would have the same predicted BLLs even though the Swimmer has a higher exposure frequency (105 days/year) than the Recreator (44 days/year).

The HHRA evaluated a child Swimmer's exposure to lead in surface water while swimming in BWL and KWL.[19] The Swimmer's total water consumption is a combination of drinking water at home and surface water while swimming. Thus, the water lead EPC was a weighted mean concentration.[20] Lead EPCs in surface water are presented in Appendix C-1, Table 3.5. Because drinking water intake varies by age in the IEUBK model, the mean drinking water intake for the six age groups (0.5 L/day) was used as the drinking water intake in calculating the weighted mean water concentration. The surface water intake while swimming (0.134 L/day) was calculated from a mean surface water ingestion rate of 49 mL/hour, multiplied by the 50$^{th}$ percentile value for time spent outdoors at a pool/river/lake (2.74 hours) (US EPA, 2011a). Weighted lead EPCs for surface water were 8.7 µg/L for BWL and 9.3 µg/L for KWL. For the child Swimmer, the total water consumption rate used in the model was the sum of the default water intake and the surface water intake of 0.134 L/day, and ranged from 0.33-0.72 L/day for the various age groups in the model.

The child Swimmer is assumed to swim 105 days/year, based on the average number of days per year (2004-2015) with temperatures greater than 80°F and precipitation of less than 1 inch (NOAA, 2004-2015). Because swimming is assumed to occur over a 4-month period (May 15 to September 15), the child is assumed to swim 7 days/week for 15 weeks. The assumption of daily exposure in this scenario is consistent with the IEUBK model, which assumes daily exposure. Thus, the model predicts a BLL consistent with an averaging time of 105 days, which may not be representative of a year-long average BLL.

It should be noted that the dermal exposure route for lead in soil is not evaluated, because this exposure route is typically insignificant when compared to ingestion. The IEUBK model makes no provision for assessing dermal exposures.

The IEUBK model was used to evaluate a child Angler who is exposed to lead *via* ingestion of sport-caught fish. To assess the impact of lead intake from fish ingestion, the model was run with and without the fish ingestion pathway. The model was first run without the fish ingestion pathway,

[18] Weighted mean concentration = [(soil EPC × 150 days/year) + (sediment EPC) × 44 days/year)] / (150 days/year).
[19] Lead is not a COPC in SL surface water.
[20] Weighted mean concentration = [(drinking water intake × drinking water concentration) + (surface water intake × surface water EPC)] / (drinking water intake + surface water intake).

using the KWL weighted soil/sediment EPC[21] and model defaults for all other parameters and media. The model was then run with these same defaults, plus the fish ingestion parameters in the alternate dietary intake menu. In accordance with EPA guidance, it was assumed that fish represents 10% of total meat intake (US EPA, 2018b). The two model runs were compared to determine the incremental impact on predicted blood lead from ingestion of fish.

[21] The weighted EPC is the same as that used to evaluate the child Recreator in KWL.

# 8 Toxicity Assessment

## 8.1 Overview of Toxicity Values

Potential cancer risk and non-cancer hazard are evaluated using dose-response relationships for carcinogenicity (oral cancer slope factors [CSFs]) and systemic toxicity (oral RfDs). The primary source of toxicity values is EPA's IRIS. Toxicity values in IRIS undergo a rigorous peer review process and are generally considered to be of high quality. Additional toxicity values were obtained from the EPA RSL Table (US EPA, 2017e), which obtained some values from the PPRTV or the HEAST.

In most cases, little information is available about the form of a compound present in environmental media at the site. Therefore, in cases in which toxicity values are available for multiple forms or species of a compound, the toxicity value for the form that is either the most widely applicable or that results in the most conservative estimates of risk were selected. Toxicity factors are summarized in Appendix C-1 (Tables 5.1, 5.2, 6.1, and 6.2), which also includes the source of the toxicity values and the form of the compound they are based on.

Cancer risks were calculated separately for carcinogens with mutagenic modes of action, to account for potentially increased susceptibility to mutagenic carcinogens for early life exposures (US EPA, 2005). For the mutagens, EPA recommends weighting the CSFs by the following ADAFs: 10-fold adjustment for the 0-2 year old age group, 3-fold adjustment for the 2-6 year old and 6-16 year old age groups, and no adjustment for the 16-26 year old age group (US EPA, 2005).[22]

### Oral Reference Doses

An RfD is an estimate of daily exposure that a sensitive population can experience over a lifetime with a negligible risk of systemic health effects. EPA derives RfDs by first identifying the highest dose level that does not cause observable adverse effects (*i.e.*, the no observed adverse effect level [NOAEL]; US EPA, 1993). If a NOAEL was not identified, a lowest observed adverse effect level (LOAEL) may be used. This dose level is then divided by uncertainty factors to calculate an RfD. An uncertainty factor of 100 is often used to account for interspecies differences (if animal studies were used) and sensitive human subpopulations (*e.g.*, children and the elderly; US EPA, 1993). Additional uncertainty factors may be used depending on the quality of the toxicological data. The oral toxicity factors used to evaluate potential non-cancer hazards are presented in Appendix C-1, Table 5.1.

### Oral Cancer Slope Factors

The CSF is an upper-bound estimate of carcinogenic potency used to calculate risk from exposure to carcinogens by relating estimates of lifetime average chemical intake to the incremental risk of an individual developing cancer over their lifetime (US EPA, 1992a). The CSFs recommended

[22] For the risk assessment, the ADAFs were included in the exposure assessment equations for convenience. Mathematically, the cancer risks results are the same, regardless of where the ADAF is applied.

by EPA are conservative, upper-bound estimates, which means that EPA is reasonably confident that the "true" cancer risk does not exceed the estimated risk calculated using the CSF, and may be as low as zero.

The CSFs and IURs for carcinogenic PAH compounds were based on a relative potency factor (RPF) approach, as described in US EPA (2010a). The toxicity factor for a particular PAH is based on the toxicity of benzo(a)pyrene multiplied by a toxicity equivalency factor that measures its potency relative to benzo(a)pyrene, as listed in IRIS (US EPA, 2017f).

The oral toxicity factors used to evaluate potential cancer risks are presented in Appendix C-1, Table 6.1.

## Dermal Reference Doses and Dermal Cancer Slope Factors

There are no EPA-derived toxicity values based specifically on toxicity studies involving dermal exposures. In the absence of dermal-specific RfDs or CSFs, oral toxicity factors are used, assuming that once a chemical is absorbed into the blood stream, the health effects are similar regardless of whether the route of exposure is oral or dermal. However, because oral toxicity criteria are based on the amount of a chemical *administered* per unit of time and body weight (chemical intake), they need to be adjusted to be applicable to *absorbed* doses (dermal exposures are expressed as absorbed intake levels) (US EPA, 1989, 1992b, 2004a).

Because most RfDs are based on studies in which a chemical is administered in food or water, this adjustment is made using the oral absorption efficiency for that chemical. If oral absorption is very high (almost 100%), then the absorbed dose is virtually the same as the administered dose, and no adjustment of the toxicity factor is necessary. If oral absorption is very low (*e.g.*, 5%), the absorbed dose is much smaller than the administered dose, and an adjustment of the toxicity criteria is necessary. For any given chemical, EPA recommends adjusting the oral toxicity factor for use in evaluating dermal risks only when the oral absorption for that chemical is less than 50%, to "obviate the need to make comparatively small adjustments in the toxicity value that would otherwise impart on the process a level of accuracy that is not supported by the scientific literature" (US EPA, 2004a).

For non-cancer effects, this adjustment is made by multiplying the oral RfD (for applied doses) by the oral absorption efficiency (*i.e.*, $RfD_{oral} \times Abs_{oral} = RfD_{dermal}$). For antimony, barium, cadmium, chromium, manganese, mercury, nickel, and vanadium, adjustments of the $RfD_{dermal}$ were performed as recommended by EPA. For arsenic, the oral absorption efficiency is 95%; therefore, no adjustment is necessary and the $RfD_{dermal}$ is the same as the $RfD_{oral}$ (Appendix C-1, Table 5.1). For the other COPCs, the dermal RfDs are the same as the oral RfDs.

For cancer, this adjustment is made by dividing the oral CSF (for applied doses) by the oral absorption efficiency (*i.e.*, $CSF_{oral} / Abs_{oral} = CSF_{dermal}$) if the oral absorption efficiency is less than 50%. For arsenic, this value is 95%; therefore, no adjustment is necessary and the $CSF_{dermal}$ is the same as the $CSF_{oral}$ (Appendix C-1, Table 6.1). No other COPCs with CSFs have oral absorption efficiencies less than 50%; thus, no other adjustments were required.

### Inhalation Reference Concentrations

Inhalation reference concentrations (RfCs) are used to evaluate systemic toxicity *via* inhalation exposure as per EPA (US EPA, 2009a). An inhalation RfC is "an estimate… of a continuous inhalation exposure to the human population (including sensitive subgroups) that is likely to be without appreciable risk of deleterious effects during a lifetime" (US EPA, 2011b). RfC values are given in units of $mg/m^3$ and are presented in Appendix C-1, Table 5.2.

### Inhalation Unit Risk

Inhalation unit risk (IUR) values are used to evaluate inhalation carcinogenicity, as recommended by EPA (US EPA, 2009a). An IUR is the "upper-bound excess lifetime cancer risk estimated to result from continuous exposure to an agent at a concentration of 1 $\mu g/m^3$ in air" (US EPA, 2011b). IUR values are given in units of $(\mu g/m^3)^{-1}$ and are presented in Appendix C-1, Table 6.2.

## 8.2 Lead

Current knowledge of lead pharmacokinetics indicates that risk values derived by the standard risk methodology would not provide an accurate indication of potential risk; therefore, EPA has not yet established toxicity criteria (RfD, CSF) for lead (US EPA, 2004b). Instead, lead risks are evaluated by modeling BLLs. Lead risks for adults are evaluated using EPA's ALM (US EPA, 2003a), as discussed in Section 7.2. Lead risks for children are evaluated using EPA's IEUBK model (US EPA, 1994a, 2010b), as discussed in Section 7.3.

EPA has assigned lead a weight-of-evidence classification for human carcinogenicity of "B2" ("probable human carcinogen") based on sufficient animal evidence but inadequate human evidence (US EPA, 2004b). Even though the weight of evidence for lead carcinogenicity is B2, EPA does not evaluate lead cancer risk using a CSF, having concluded that neurological effects in young children are the most relevant endpoint. Adult risks are assessed based on BLLs, with a goal of protecting against this effect in the unborn children of pregnant women.

# 9 Risk Characterization

The HHRA evaluated the cancer risk and non-cancer hazard for all receptors exposed to the various media in each exposure area. The total risk for each receptor is the sum of the risks over all COPCs and all exposure pathways.

## 9.1 Calculation of Cancer Risk

Cancer risks are characterized as the incremental probability that an individual will develop cancer during his or her lifetime due to chemical exposure to contaminants at the site under the specific exposure scenarios evaluated. The risks are calculated with the inputs for the exposure parameters that were described earlier in this report. The term "incremental" implies the risk above the background cancer risk experienced by all individuals in the course of daily life. According to the American Cancer Society, the lifetime probability of developing cancer (*i.e.*, background cancer risk) is slightly less than 1 in 2 (42%) for men and slightly more than 1 in 3 (38%) for women (ACS, 2017). The incremental risk above the background cancer risk is termed the "excess lifetime cancer risk" (ELCR). Cancer risks are expressed as a unitless probability (*e.g.*, 1 in 1 million, or $1 \times 10^{-6}$) of an individual developing cancer over a lifetime, above background risk, as a result of site-related exposures. EPA has established a target cancer risk range of $1 \times 10^{-6}$ to $1 \times 10^{-4}$ (US EPA, 1990, 1991a).

Excess (incremental) cancer risks for the ingestion and dermal pathways were calculated using intake estimates (lifetime average daily doses, calculated as part of the exposure assessment) and CSFs (summarized as part of the toxicity assessment), as follows (US EPA, 1989):

$$Cancer\,Risk = Intake\left(\frac{mg}{kg \cdot day}\right) \times SF\left(\frac{mg}{kg \cdot day}\right)^{-1}$$

For the inhalation pathway, the cancer risk was calculated as the inhalation exposure concentration (in $\mu g/m^3$) multiplied by the IUR:

$$Cancer\,Risk = EC\left(\frac{\mu g}{m^3}\right) \times IUR\left(\frac{\mu g}{m^3}\right)^{-1}$$

Cancer risks were calculated for each exposure pathway and COPC according to EPA guidance (US EPA, 1989). The total ELCR is the sum of the cancer risks across all COPCs and exposure pathways for each exposure area. Pursuant to EPA guidance (US EPA, 1989), the total cancer risks were rounded to one significant digit for presentation.[23]

[23] The use of significant figures in reporting risk results was presented in EPA (1989), page 8-8 for non-cancer hazard and page 8-12 for cancer risk.

## 9.2 Calculation of Non-cancer Hazard

Risks from non-carcinogenic effects are expressed as HQs rather than probabilities. An HQ compares the calculated intakes and exposures (average daily doses or exposures, calculated as part of the exposure assessment in Section 7) to RfDs or concentrations derived by EPA (RfDs and RfCs) (summarized as part of the toxicity assessment in Section 8).

For soil ingestion, oral intake estimates (expressed as applied or administered doses) were divided by the oral RfD (applicable to applied or administered doses). For dermal exposures to soil, dermal intake estimates (expressed as an absorbed dose) were divided by an adjusted oral RfD (adjusted to apply to absorbed doses) (US EPA, 2004a). The HQ for oral and dermal intakes was calculated based on the RfD as shown in EPA (1989):

$$HazardQuotient = \frac{Intake\left(\frac{mg}{kg \cdot day}\right)}{RfD\left(\frac{mg}{kg \cdot day}\right)}$$

For the inhalation pathway, the HQ was calculated as the inhalation exposure concentration (in $mg/m^3$) divided by the inhalation RfC:

$$Hazard\ Quotient = \frac{EC\left(\frac{mg}{m^3}\right)}{RfC\left(\frac{mg}{m^3}\right)}$$

HQs were calculated for each receptor, exposure pathway, and COPC according to EPA guidance (US EPA, 1989). For each exposure route, HQs were summed across all COPCs to calculate a hazard index (HI). As per EPA guidance, HIs were rounded to one significant figure, and HIs for the individual exposure pathways were rounded to two significant figures (US EPA, 1989).

EPA considers an HI greater than 1 to exceed the target risk threshold. Because an HQ is simply a ratio of site exposures to reference exposure levels (RfDs, RfCs, *etc.*), HIs do not represent the probability that an adverse health effect will occur. An HI less than 1 suggests that exposures are likely to be without an appreciable risk of non-cancer effects during a lifetime. An HI greater than 1 indicates only that a potential may exist for adverse health effects.

Summing HQs for different COPCs represents a conservative approach that may overestimate actual site risks, because the RfD or RfC for a COPC is calculated based on a specific toxicological endpoint (*e.g.*, liver or kidney effects). As recognized by EPA (1989), summations are most valid for chemicals that are associated with similar toxicological endpoints (*i.e.,* they affect the same target organ or operate *via* similar mechanisms of action). Based on EPA guidance, major effects categories for target organs or systems include neurotoxicity, developmental toxicity, reproductive toxicity, immunotoxicity, and adverse effects by target organ (*i.e.*, hepatic, renal, respiratory, cardiovascular, GI, hematological, musculoskeletal, and dermal/

ocular effects) (US EPA, 1989). The following target organs or systems were identified: developmental, endocrine, GI, hematological, hepatic, immunological, nervous system, renal, reproductive, respiratory, and skin. The target system was assigned as "systemic" when the critical effect was identified as decreased body weight or when the effect was of unclear biological significance (*e.g.*, decreased hair cystine). In order to provide an accurate estimate of potential non-cancer health risks, the risk tables in Appendix C-1 present the HIs summed by toxicological endpoint (Appendix C-1, Tables 9.1-9.9).

## 9.3 Risk Characterization for Lead

As described in Section 7.2, lead risks were assessed using EPA's IEUBK model, for children, and EPA's ALM, for adults. At EPA's direction, lead risk for children is reported as the probability of having a BLL greater than 5 µg/dL (rather than 10 µg/dL), based on EPA's Office of Land and Emergency Management (OLEM) Directive 9200.2-167 (US EPA, 2016), which summarizes current toxicological evidence. Lead risk for adults is reported as the probability that the fetal blood lead exceeds 5 µg/dL. EPA's target protection level for children is that a child should not have greater than a 5% probability of having a BLL greater than 10 µg/dL (US EPA, 1998, 2016). However, at EPA's direction, a target BLL of 5 µg/dL rather than 10 µg/dL was used in this HHRA. EPA considers lead risks to exceed the target risk threshold if the probability of having a BLL greater than the blood lead target is greater than EPA's goal of 5%. This risk target is the same for the fetus of an adult receptor.

## 9.4 Risk Results

The estimated cancer risks and non-cancer hazards are discussed below, by exposure area and receptor. The total risk for each receptor is the sum of the risks over all COPCs and exposure pathways. The total HI for each receptor is the sum of the HIs for each exposure route. Pursuant to EPA guidance (US EPA, 1989), the total HIs were rounded to one significant figure; HIs for the individual exposure pathways were rounded to two significant figures.[24] Cancer risks were reported with one significant figure (US EPA, 1989).

As previously discussed, risks were calculated two ways: (1) assuming that Cr(VI) is 5% of the total chromium concentration for soil, sediment, and fish (Appendix C-1), and (2) assuming Cr(VI) is 100% of the total chromium concentration in these media (Appendix C-2). The cancer risks and non-cancer hazards for all areas are summarized in Tables 10.1 (5% Cr[VI]) and 10.2 (100% Cr[VI]). Appendix C-1, Tables 7.1-7.18 present the detailed risk calculations, and Appendix C-1, Tables 9.1-9.9 present the summary of cancer risk and non-cancer hazard by receptor as well as the non-cancer hazards by target organ.[25] Appendix C-1, Tables 10.1-10.9 present the summary of cancer risks and non-cancer hazards, with a focus on COPCs that drive risk or hazard.[26] Appendix C-1, Table 11 presents a summary of the cancer risks and non-cancer hazards. Appendix C-1, Table 12 presents a summary of risk by exposure pathway and includes the percentage contribution of each pathway to the total risk and the COPC contributing the majority

[24] The use of significant figures in reporting risk results is presented in EPA (1989), page 8-8 for non-cancer hazard and page 8-12 for cancer risk.
[25] EPA RAGS Table 8 is not applicable to this risk assessment and is therefore not presented.
[26] Compounds presented in the Table 10 series meet one of three criteria: (1) the compound has a pathway-specific or total cancer risk greater than $10^{-6}$, or a pathway-specific or total HQ greater than 1.0; (2) the compound contributes 20% or more to a total cancer risk greater than $10^{-6}$ or an HI greater than 1.0; or (3) the compound contributes 20% or more to a target endpoint-specific HI greater than 1.0.

of the risk for each pathway. Appendix C-1, Table 13 presents a summary of risk by media for each receptor (except Anglers, who were evaluated for fish ingestion only). Appendix C-1, Tables 14.1 (cancer) and 14.2 (non-cancer) provide risks or HIs by medium and analyte for each receptor and exposure area, to allow the determination of the major risk-drivers. The equivalent tables for the 100% Cr(VI) evaluation are presented in Appendix C-2, with the same table numbering. In the results sections below, risks/hazards are first presented based on the 5% Cr(VI) assumption, then any differences in risk/hazard based on the 100% Cr(VI) assumption are presented.

EPA has established a target cancer risk range of $1 \times 10^{-6}$ to $1 \times 10^{-4}$ (US EPA, 1990, 1991a). If the cancer risk is greater than $1 \times 10^{-4}$, there may be a concern for possible health effects. As noted in Section 9.2, EPA considers an HI greater than 1 to exceed the target risk threshold.

The risks from exposure to lead are summarized in report Table 11. The output from the blood lead modeling is presented in Appendix F.

### 9.4.1 Silver Lake

Cancer risks and non-cancer hazards were calculated for the adult, adolescent, and child Recreator and Swimmer at SL. All receptors were exposed to sediment and surface water.

Cancer risks for the adult Recreator, adolescent Recreator, child Recreator, adult Swimmer, and adolescent Swimmer were $1 \times 10^{-5}$, $1 \times 10^{-5}$, $4 \times 10^{-5}$, $7 \times 10^{-5}$, and $8 \times 10^{-5}$, respectively, and these values are all within EPA's target risk range. For the adult and adolescent Recreators, incidental ingestion and dermal contact with sediment contributed approximately 60% of the total cancer risk, and dermal contact with surface water contributed approximately 40% of the total cancer risk. For the child Recreator, incidental ingestion of sediment contributed 59% of the total cancer risk.

For the adult and adolescent Swimmers, dermal contact with surface water accounted for 75% of the total cancer risk. For the child Swimmer, the cancer risk was $2 \times 10^{-4}$, which is above EPA's target risk range. Dermal contact with surface water contributed 55% of the total cancer risk, followed by incidental ingestion of sediment (30%). Benzo(a)pyrene was the major contributor to risk for both of these exposure pathways (58-61%).

Non-cancer hazards for the adult Recreator, adolescent Recreator, child Recreator, adult Swimmer, and adolescent Swimmer were 0.08, 0.1, 0.4, 0.7, and 0.8, respectively, and these values are all below EPA's target HI of 1. The non-cancer hazard for the child Swimmer was 2; however, the HIs by target organ were all less than 1 (Appendix C-1, Table 9.6). Dermal contact with surface water contributed 40% of the total HI, followed by incidental ingestion of sediment (33%) and incidental ingestion of surface water (25%). The main contributors to hazard were benzo(a)pyrene for dermal contact with surface water (45%) and manganese for ingestion of surface water (40%). Although benzo(a)pyrene and manganese were the major contributors to non-cancer hazard for the child Swimmer, the HIs by target organ were all less than 1. Therefore, these compounds are not considered primary COPCs for this exposure pathway.

The assumption that chromium in SL sediment consisted of 100% Cr(VI) did not change the total risk or HI for any receptor except the child Recreator. For the child Recreator, the cancer risk increased from $4 \times 10^{-5}$ to $5 \times 10^{-5}$ and the HI increased from 0.4 to 0.5. For all receptors, the relative contribution of different exposure pathways remained the same, although exact percentages differed from those reported above. The child Swimmer remained the only receptor

in SL for which the cancer risk and the non-cancer HI are above EPA's targets. Benzo(a)pyrene remained the major contributor to cancer risks; benzo(a)pyrene and manganese remained the major contributors to non-cancer hazards.

The predicted GM BLLs for the adult Recreator, child Recreator, adult Swimmer, and child Swimmer were 0.7, 1.4, 1.0, and 2.6 µg/dL, respectively. The probabilities of fetal BLL exceeding 5 µg/dL for the adult Recreator (0.03%), child Recreator (0.3%), and adult Swimmer (0.1%) were below EPA's goal of 5%. The probability of BLL exceeding 5 µg/L for the child Swimmer (8%) exceeded EPA's goal of 5%.

### 9.4.2 Bridgewood Lake

Cancer risks and non-cancer hazards were calculated for the adult, adolescent, and child Recreators and Swimmers at BWL. Recreators were exposed to soil, sediment, and surface water at BWL. Swimmers were exposed to sediment and surface water at BWL.

Cancer risks for the adult Recreator, adolescent Recreator, child Recreator, adult Swimmer, and adolescent Swimmer were $5 \times 10^{-5}$, $3 \times 10^{-5}$, $1 \times 10^{-4}$, $8 \times 10^{-5}$, and $6 \times 10^{-5}$, respectively, and all of these values are within EPA's target risk range. For the Recreators, the major contributors to cancer risk were incidental ingestion of soil (41-49%) and sediment (30-39%). For the Swimmers, incidental ingestion of sediment (44%) and dermal contact with sediment (20-26%) accounted for most of the total cancer risk.

Cancer risk for the child Swimmer was $2 \times 10^{-4}$, which is above EPA's target risk range. Ingestion of sediment contributed 57% of the total cancer risk, followed by ingestion of surface water (20%). Arsenic contributed most of the cancer risks for ingestion of sediment (85%) and surface water (73%).

Non-cancer hazards for the adult Recreator, adolescent Recreator, adult Swimmer, and adolescent Swimmer were 0.4, 0.7, 0.7, and 1, respectively, and these values do not exceed EPA's target HI of 1. Non-cancer hazards for the child Recreator and child Swimmer were 3 and 5, respectively, which are above EPA's target HI of 1. For the child Recreator, incidental ingestion of soil contributed 55% to the total HI, followed by incidental ingestion of sediment (37%). The major driver of hazard was arsenic for ingestion of soil (67%) and sediment (72%). The HIs by target organ for the child Recreator were 3 for skin and below 1 for all other target organs (Appendix C-1, Table 9.3). For the child Swimmer, incidental ingestion of sediment contributed 59% of the total HI, with arsenic accounting for 72% of the sediment ingestion hazard. Incidental ingestion of surface water contributed 31% to the total HI, with thallium contributing 49% of the surface water ingestion hazard. The HIs by target organ for the child Recreator were 4 for skin and below 1 for all other target organs (Appendix C-1, Table 9.6).

Using the assumption of 100% Cr(VI) for soil and sediment increased the cancer risks for all receptors. For adult and adolescent receptors, cancer risks remained within EPA's target range, and the relative contributions of various exposure pathways to total cancer risks remained the same. For the child Recreator, the total cancer risk increased from $1 \times 10^{-4}$ to $2 \times 10^{-4}$, which is above EPA's target risk range. Nearly all of the cancer risk came from ingestion of soil (48%) and ingestion of sediment (47%), and chromium was the major contributor for both exposure pathways (58-68%). For the child Swimmer, the total cancer risk increased from $2 \times 10^{-4}$ to $3 \times 10^{-4}$ and remains above the EPA target risk range. Incidental ingestion of sediment contributed 79% to

the cancer risk, with chromium contributing 68% of the sediment ingestion risk. Non-cancer HIs remained the same for all receptors except the child Recreator, which increased from 3 to 4.

The predicted GM BLLs for the adult Recreator, child Recreator, adult Swimmer, and child Swimmer were 1.2, 6.7, 3.7, and 13 µg/dL, respectively. The probability of fetal BLL exceeding 5 µg/dL for the adult Recreator (0.5%) was below EPA's goal of 5%. The probability of BLL exceeding 5 µg/L for the child Recreator (73%), adult Swimmer (25%), and child Swimmer (98%) exceeded EPA's goal of 5%.

### 9.4.3 Hilliards Creek

Cancer risks and non-cancer hazards were calculated for the adult, adolescent, and child Recreators exposed to soil, sediment, and surface water at HC.

Cancer risks for the adult and adolescent Recreators are both $1 \times 10^{-4}$, which is within EPA's target risk range. Incidental ingestion of soil contributed 60% of the cancer risk for both receptors. The cancer risk for the child Recreator is $4 \times 10^{-4}$, which is above EPA's target risk range. Incidental ingestion of soil contributed 70% to the cancer risk, and arsenic was the major contributor (77%) to soil ingestion risk.

The non-cancer hazard for the adult Recreator was 1, which does not exceed EPA's target HI. Non-cancer hazards for the adolescent and child Recreators were 2 and 10, respectively, and these values are above EPA's target HI of 1. Incidental ingestion of soil was the primary contributor (63-72%) to non-cancer HIs, with arsenic accounting for 77% of the soil ingestion hazard, for both receptors. For the adolescent Recreator, the HIs by target organ were at or below 1 for all target organs (Appendix C-1, Table 9.2). For the child Recreator, the HIs by target organ were 8 for skin and below 1 for all other target organs (Appendix C-1, Table 9.3).

Using the assumption of 100% Cr(VI) in soil and sediment increased the cancer risks for all receptors. For adult and adolescent Recreators, the total cancer risks increased from $1 \times 10^{-4}$ (for both receptors) to $2 \times 10^{-4}$ and $3 \times 10^{-4}$, respectively. For the child Recreator, the total cancer risk increased from $4 \times 10^{-4}$ to $2 \times 10^{-3}$. For all three receptors, the relative contributions of various exposure pathways to total cancer risks remained the same. For the adolescent and child Recreators, the major contributors to soil ingestion risk were chromium (68-83%) and arsenic (16-31%).

The assumption of 100% Cr(VI) increased the non-cancer HI from 10 to 11 for the child Recreator but did not change the non-cancer HI for the other receptors. Incidental ingestion of soil remains the major contribution exposure pathway for non-cancer HI, and arsenic remains the major driver of inhalation hazard. HIs by target organ did not change appreciably.

The predicted GM BLLs for the adult and child Recreators were 4.7 and 25 µg/dL, respectively. The probability of BLL exceeding 5 µg/L for the adult Recreator (38%) and child Recreator (99.97%) exceeded EPA's goal of 5%.

### 9.4.4 Kirkwood Lake

Cancer risks and non-cancer hazards were calculated for the adult, adolescent, and child Recreators and Swimmers at KWL. Recreators were exposed to soil, sediment, and surface water at KWL. Swimmers were exposed to sediment and surface water at KWL.

Cancer risks for the adult Recreator, adolescent Recreator, child Recreator, adult Swimmer, adolescent Swimmer, and child Swimmer were $1 \times 10^{-5}$, $7 \times 10^{-6}$, $3 \times 10^{-5}$, $3 \times 10^{-5}$, $3 \times 10^{-5}$, and $9 \times 10^{-5}$, respectively, and these values are all within EPA's target risk range. For the adult and adolescent Recreators, contribution to cancer risk was mainly from incidental ingestion of sediment (48-50%), dermal contact with sediment (22-29%), and incidental ingestion of soil (16-17%). For the child Recreator, contribution to cancer risk was mainly from sediment and soil ingestion (65% and 22%, respectively). For the Swimmers, incidental ingestion of sediment accounted for 35-46% of the cancer risk, with the other exposure pathways contributing 15-33% of the risk.

Non-cancer hazards for the adult Recreator, adolescent Recreator, child Recreator, adult Swimmer, and adolescent Swimmer were 0.1, 0.2, 1, 0.7, and 1, respectively, and these values do not exceed EPA's target HI of 1. The non-cancer hazard for the child Swimmer was 6, which exceeds EPA's target HI of 1. For the child Swimmer, incidental ingestion of surface water contributed 70% of the total non-cancer HI, with thallium accounting for 87% of the surface water ingestion hazard. The HIs by target organ for the child Recreator were 5 for skin and below 1 for all other target organs (Appendix C-1, Table 9.6).

Using the assumption of 100% Cr(VI) in soil and sediment increased the total cancer risks for all receptors, though risks for all receptors except the child Swimmer remained within EPA's target risk range. For all three Recreators, the relative contributions of various exposure pathways to total cancer risks remained the same. The total cancer risk for the child Swimmer increased from $9 \times 10^{-5}$ to $3 \times 10^{-4}$, which is above EPA's target risk range. For all three Swimmers, the contribution of the sediment ingestion pathway to total risks increased, from 35-46% to 51-83%, and chromium became the major contributor (52-87%) to sediment ingestion risks. The non-cancer HI for the adult Swimmer increased from 0.7 to 0.8, but did not change for the other receptors.

The predicted GM BLLs for the adult Recreator, child Recreator, adult Swimmer, and child Swimmer were 1.1, 5.7, 2.7, and 10. µg/dL, respectively. The probability of fetal BLL exceeding 5 µg/dL for the adult Recreator (0.3%) was below EPA's goal of 5%. The probability of BLL exceeding 5 µg/L for the child Recreator (61%), adult Swimmer (11%), and child Swimmer (93%) exceeded EPA's goal of 5%.

### 9.4.5 Summary for Soil, Sediment, and Surface Water

Using the assumption that chromium in soil and sediment is 5% Cr(VI), the analytes with the greatest contribution to risk or hazard for receptors with risk or hazard above EPA's targets varied by exposure area and receptor, but generally included the following COPCs.[27]

- **Soil:** Arsenic, lead, thallium
- **Sediment:** Arsenic, lead, thallium, benzo(a)pyrene
- **Surface Water:** Arsenic, chromium, lead, manganese, thallium, benzo(a)pyrene

A summary of the risk results is presented below.

- **Silver Lake**
  - There are no unacceptable risks or hazards to Recreators.
  - Cancer risk and non-cancer hazard for the child Swimmer exceeded targets. This is driven by benzo(a)pyrene in surface water and sediment. The benzo(a)pyrene EPCs in surface water (0.0002 mg/L) and sediment (15 mg/kg) are an order of magnitude higher than the EPCs in the other exposure areas. In addition, manganese contributed significantly to surface water hazards. Although benzo(a)pyrene and manganese were the major contributors to non-cancer hazard for the child Swimmer, the HIs by target organ were all less than 1; therefore, these compounds are not considered primary COPCs for this exposure pathway. Other PAHs, notably dibenzo(a,h)anthracene and the TIC benzo(j)fluoranthene, contributed to sediment risks. Lead risks for the child Swimmer also exceeded targets.
- **Bridgewood Lake**
  - Cancer risks were below targets for all Recreators. Non-cancer hazards exceeded the target HI in BWL for the child Recreator. The hazards in BWL are primarily driven by arsenic in soil. Thallium in soil and arsenic in sediment also contribute significantly to the overall hazards. The thallium EPC in soil (0.85 mg/kg) is comparable to that in HC and KWL. The arsenic EPC in sediment (284 mg/kg) is 3 and 30 times higher than in KWL and SL, respectively. Lead risks for the child Recreator also exceeded targets.
  - Cancer risk and non-cancer hazard for the child Swimmer exceeded targets. This is primarily due to the presence of arsenic in sediment. Although surface water is a minor exposure pathway for the Swimmer (contributing 30-40% to overall risks and hazards), it should be noted that the surface water HI is above 1 for the child, which is driven by arsenic and thallium. Lead risks for the adult and child Swimmer also exceeded targets.

[27] This list assumed a 20% threshold for contribution to risk or hazard for a given exposure pathway, based on Appendix C-1, Tables 14.1 and 14.2. Appendix C-1 assumes chromium is 5% Cr(VI) in soil and sediment. Chromium becomes a significant contributor to risk in soil and sediment when it is assumed that chromium is 100% Cr(VI) (Appendix C-2).

- **Hilliards Creek**
  - Cancer risks and non-cancer hazards exceeded targets for one or more Recreators. The primary driver for cancer risk and non-cancer hazard in HC is arsenic in soil, where the EPC (497 mg/kg) is significantly higher than in BWL and KWL. Although sediment is a minor exposure pathway for the child Recreator in HC, the sediment HI is above 1, driven by arsenic (EPC = 386 mg/kg). Lead risks for the adult and child Recreator also exceeded targets.
- **Kirkwood Lake**
  - There are no unacceptable risks or hazards from COPCs other than lead to Recreators. Lead risks for the child Recreator exceeded targets.
  - Non-cancer hazard exceeded the target for the child Swimmer. This was primarily driven by thallium in surface water. The thallium EPC in surface water (0.0058 mg/L) is comparable to HC but 5 times higher than the BWL EPC. Sediment is a minor exposure pathway for KWL Swimmers (contributing approximately 25% to overall hazards), but the sediment HI for the child Swimmer is driven by arsenic. Lead risks for the adult and child Swimmer exceeded targets.

Using the assumption that chromium in soil and sediment is 100% Cr(VI), chromium becomes a significant risk-driver in HC and BWL. In general, the 100% Cr(VI) assumption increased risks slightly, and there were four scenarios in which the risk or hazard changed from acceptable to unacceptable. For the child Swimmer in KWL, the cancer risk increased to $3 \times 10^{-4}$. For the child Recreator in BWL, the cancer risk increased to $2 \times 10^{-4}$. For the adult and adolescent Recreators in HC, the cancer risk increased to $2 \times 10^{-4}$ and $3 \times 10^{-4}$, respectively.

### 9.4.6 Fish Ingestion Risk

Cancer risks and non-cancer hazards resulting from ingestion of fish caught in KWL were calculated for the adult, adolescent, and child Anglers. Cancer risks for the adult, adolescent, and child Anglers were $3 \times 10^{-5}$, $3 \times 10^{-5}$, and $5 \times 10^{-5}$, respectively, all within EPA's target risk range. Non-cancer hazard for the adult Angler was 1. Non-cancer hazards for the adolescent and child Anglers were 2 and 3, respectively, above EPA's target HI of 1. For all three receptors, Aroclor-1254 was the major contributor (62%) to non-cancer hazard, followed by Aroclor-1260 (26%). The HI for immunological effects was 2 for the child Angler, but at or below 1 for all other endpoints and receptors.

Assuming 100% Cr(VI) increased cancer risks for the adult, adolescent, and child Anglers to $3 \times 10^{-4}$, $4 \times 10^{-4}$, and $6 \times 10^{-4}$, respectively; all were above EPA's target risk range. For all three receptors, chromium was the major contributor (93-99%) to fish ingestion risk. Non-cancer hazards for the adolescent and child Anglers were still 2 and 3, respectively, but the non-cancer HI increased from 1 to 2 for the adult Angler.

As discussed in Section 5.5, data from all fish species were combined into one dataset for this HHRA. This reflects the assumption that an Angler would catch and consume a mix of species over time. However, the EPCs vary by species (Appendix G, Table G.4). Most of the highest EPCs are found in common carp, but the chromium EPC is highest in the largemouth bass. Thus, risks may be higher for an Angler who preferentially consumes common carp. The EPCs for the benthic omnivores are higher than those in the combined dataset, therefore, risk estimates for an

Angler who preferentially consumes benthic omnivores would be higher than those estimated in this HHRA. The EPCs for sport fish are lower than those in the combined dataset for the two Aroclors, DDD, and DDE; thus, for an Angler who preferentially consumes sport fish, the risks may be lower than those estimated in this HHRA.

Lead risk from fish was assessed using the ALM for the adult Angler and the IEUBK model for the child Angler. For both evaluations, a baseline GM BLL was calculated using the weighted soil/sediment EPC for Kirkwood Lake, and then a second GM BLL was calculated using the baseline inputs plus fish ingestion. For the adult Angler, the predicted baseline GM BLL was 1.1 µg/dL and the probability of fetal BLL exceeding 5 µg/dL was 0.3%. Adding the fish ingestion pathway resulted in a BLL of 1.3 µg/dL and a 0.8% probability of fetal BLL exceeding 5 µg/dL. For the child Angler, the predicted baseline GM BLL was 5.7 µg/dL, with a 61% probability of BLL exceeding 5 µg/dL. Adding the fish ingestion pathway resulted in a BLL of 5.8 µg/dL, with a 62% probability of exceeding 5 µg/dL (Table 11). The incremental BLL attributable to fish ingestion is 0.2 and 0.1 µg/dL for the adult and child Angler, respectively (Appendix F). Thus, incidental ingestion of soil and sediment contribute most of the risk for the Angler. Although EPA does not support a risk target in terms of an incremental BLL, California has adopted an incremental risk target, which can be considered for comparison. The California Office of Environmental Health Hazard Assessment (CalOEHHA) considers "lead exposures from a specific location that cause a rise in a child's blood lead level by more than 1 µg/dL as significant for purposes of risk assessment" (CalOEHHA, 2007). The BLL increment due to fish ingestion of 0.1 µg/dL estimated in this risk assessment is very small compared to the CalOEHHA risk target of 1 µg/dL. The probability of BLL exceeding 5 µg/dL was below EPA's goal of 5% for the adult Angler and above 5% for the child Angler. It should be noted that if there is lead uptake into fish, lead will tend to accumulate in the bones rather than fillet, which is more likely to be consumed by recreational anglers (US FWS, 1988).

# 10 Uncertainty

The HHRA process involves multiple steps and assumptions, which contribute inherent uncertainties that affect the final risk estimates. Uncertainties may exist in numerous areas, including sample collection, laboratory analysis, derivation of toxicity values, and estimation of potential site exposures. EPA's approach to HHRA involves the concept of "reasonable maximum exposure" (RME), which is defined as "the highest exposure that is reasonably expected to occur at a site but that is still within the range of possible exposures" (US EPA, 2004a). EPA states that "intent of the RME is to estimate a conservative exposure case (*i.e.*, well above the average case) that is still within the range of possible exposures" (US EPA, 1989). EPA also notes that this high-end exposure "is the highest dose estimated to be experienced by some individuals, commonly stated as approximately equal to the 90th percentile exposure category for individuals" (US EPA, 2015c). Thus, most individuals will have lower exposures that those presented in this risk assessment. The most important contributors to uncertainty in this risk assessment are discussed below.

## 10.1 Uncertainties in Exposure Assumptions

### 10.1.1 Exposure Pathways

Several exposure pathways are incomplete and were not quantitatively evaluated in the HHRA. Due to the shallow nature of HC (0.5-3 ft), it was assumed that no significant ingestion of surface water would occur during a wading scenario. Any incidental ingestion of surface water while wading would be expected to be very small and have a negligible contribution to risk; thus, the exclusion of this exposure pathway is not expected to change the overall conclusions of the risk assessment.

### 10.1.2 Exposure Point Concentrations

In some cases, the maximum concentration was used as the EPC, because either the calculated 95% UCLM was greater than the maximum detected value, or the UCLM could not be calculated. This may occur when there are very few detects or the concentration distribution is highly skewed. The use of the maximum concentration as the EPC likely results in an overestimate of risk, because the maximum is not representative of an individual's average exposure over a long period of time. The EPC was equal to the maximum concentration for the following COPCs.

- **Soil:** Thallium in KWL
- **Sediment:** Benzo(j)fluoranthene (TIC) in SL
- **Surface Water:** Benzo(a)pyrene in BWL; thallium in HC; antimony, cobalt, thallium in KWL

Field duplicates were averaged with their parent sample to obtain one result per sample before calculating EPCs. Using the average, rather than the maximum, of the parent and field duplicate would not result in a significant change to the EPCs or conclusions of the risk assessment. A comparison of the data for COPCs from 72 parent/duplicate pairs (1,437 records) (*i.e.*, maximum *vs.* average of the parent/duplicate pair) shows that the ratio of the maximum to the average ranges from 1-1.98, with a mean of 1.13. Thus, the use of the average is unlikely to result in an underestimation of the EPC.

Cyanide was conservatively assumed to be in the form of cyanide ion (CN-) or hydrogen cyanide (HCN) (US EPA, 2017g). However, the form of cyanide present at the site is not known. Thus, risks from cyanide may be overestimated if the cyanide is in a form that does not produce HCN (*e.g.*, an iron-cyanide complex like the pigment Prussian blue, which is composed of ferric ferrocyanide). Furthermore, the cyanide concentration in air is estimated from the soil concentration using a VF; however, if the cyanide is present in a non-volatile form such as an iron-cyanide complex, then risks would be lower.

The surficial soil dataset used in this HHRA includes 28 samples (out of a total of 410) that were composited over a depth interval of more than 0.5 ft, the majority of which were from the 0-2 ft depth interval. Depth-composite samples were collected from BWL, HC, and KWL. Compositing a sample across a wider depth interval could potentially dilute contamination that is present within a narrower depth interval. Therefore, the inclusion of composite samples in the HHRA may have resulted in an underestimation of risk for surface soils.

The HHRA evaluated risk from Cr(VI) assuming Cr(VI) was either 5% or 100% of the total chromium concentration, for both soil and sediment. The value of 5% was based on an evaluation of the 2016 FMP soil data, in which Cr(VI) was on average 5% of total chromium (Sherwin-Williams, 2016). The CSM indicates that HC was contaminated *via* discharges from the FMP that were carried downstream in surface water and sediment and that soil in the HC floodplain was contaminated *via* periodic stream flooding. In addition, conditions along HC, such as high total organic carbon (TOC) from decaying vegetation, favor a reducing environment that would reduce Cr(VI) to Cr(III). Thus, downstream Cr(VI) concentrations are expected to be less than or equal to those in the source area (the FMP). Because the percentage of Cr(VI) in HC sediment is likely to be no higher than in the source area (FMP soil), the assumption that total chromium is 100% Cr(VI) in soil and sediment likely overestimates risk.

The HHRA used the conservative assumption that total chromium detected in surface water was 100% Cr(VI). This assumption likely overestimates risk because chromium speciation is a function of pH and Eh (redox potential), and previous geochemical modeling indicated that Cr(VI) would be less than 1% of the total chromium concentration (Sherwin-Williams, 2015). The magnitude of the impact on risk/hazard is estimated below.

- In SL, surface water accounts for a significant portion of the total cancer risks and non-cancer hazards for the Recreators and Swimmers, but chromium contributes only a small portion of the surface water cancer risks (4-11%) and non-cancer hazards (1% or less). Therefore, this uncertainty is unlikely to have a significant impact on the overall risk and hazard estimates in SL.
- In BWL, HC, and KWL, surface water accounts for 5% or less of the total cancer risks and non-cancer hazards for the Recreators. Therefore, although chromium contributes a significant percentage to the surface water cancer risks in all three areas (36-43% in BWL, 81-99% in HC and KWL) and to the surface water non-cancer hazards in HC (54%), this

uncertainty is unlikely to have a significant impact on the overall risk and hazard estimates for the Recreators.

- For the Swimmers in BWL and KWL, surface water accounts for 15-33% of the total cancer risks and chromium contributes a significant percentage to the surface water cancer risks (25-39% in BWL, 49-70% in KWL). Surface water accounts for a significant portion of the total non-cancer hazards for Swimmers in BWL (33-39%) and KWL (70-74%), but chromium only contributes 4% or less to the surface water hazards. Therefore this assumption may have overestimated cancer risks for the Swimmers, but is unlikely to have significant impact on the overall hazard estimates.

As discussed in Section 7.1.7, arsenic in fish was assumed to consist of 10% inorganic arsenic based on the published literature, and the EPC (calculated based on total arsenic concentrations) was adjusted by 10%. If this adjustment factor was not applied, then the risks from arsenic would be 10-fold higher for the Anglers.

Certain organic compounds, such as PCBs, tend to accumulate in the skin and fatty tissue of fish (US EPA, 2000). The EPCs for PCBs in fish are likely underestimated, because most of the fish were analyzed with the skin off; this may affect the higher trophic level species (*i.e.*, common carp and largemouth bass) in particular. Thus, if Anglers consume fish with the skin on, the risks associated with exposure to PCBs in fish are likely underestimated.

Recreators in HC, BWL, and KWL are exposed to soil from passive recreation and sediment from wading. Exposure to soil is assumed to occur 150 days/year, while exposure to sediment is assumed to occur on 44 of those 150 days/year. The lead EPC for evaluating lead risks is a weighted mean for soil and sediment; it assumes that on the days the Recreator is exposed to both soil and sediment, his exposures are additive, so that if his soil ingestion rate is 100 mg/day, his intake would be 100 mg of soil plus 100 mg of sediment. This is a conservative assumption that is likely to overestimate intake and risk, because soil ingestion rates are based on numerous tracer studies that estimate intakes based on trace elements present in soil, and the estimates are for the combined intake of soil and dust (and soil-like material such as sediment). Thus, doubling a Recreator's total ingestion rate on days with exposure to both sediment and soil is inconsistent with the results of the soil ingestion studies, due to the manner in which soil ingestion has been measured. For this reason, an uncertainty analysis was conducted for lead risk using an alternative soil/sediment weighting scheme, in which the Recreator is exposed to soil only for 106 days/year and to the mean of soil and sediment for 44 days/year, for a combined total of 150 days/year. This analysis assumes that the total amount of soil or soil/sediment ingested remains the same on each of the 150 days, and the weighted mean lead EPC is given by the following equation:

$$\text{Weighted mean} = ([\text{soil EPC} \times 106 \text{ days/year}] + [\text{mean of soil \& sediment EPC}] \times 44 \text{ days/year})/(150 \text{ days/year})$$

The weighted mean EPCs are lower using the alternative weighting scheme, with alternative weighted EPCs of 378 mg/kg for BWL, 3,213 mg/kg for HC, and 330 mg/kg for KWL. Table 12 presents the risk results from the alternative analysis, with the model output included in Appendix F. For the child Recreator, the predicted probabilities of having a BLL above 5 µg/dL are 42%, 99.9%, and 34%, for BWL, HC, and KWL, respectively. For the adult Recreator, the predicted probabilities of having a fetal BLL above 5 µg/dL are 0.2%, 25%, and 0.1%, for BWL, HC, and KWL, respectively. For the adult Angler, the predicted probability of having a fetal BLL

above 5 µg/dL is 0.4%. For the child Angler, the predicted probability of having a BLL above 5 µg/dL is 34%. Thus, the alternative soil/sediment weighting results in slightly lower lead risks, but does not change any of the risk conclusions.

### 10.1.3 Exposure Frequency and Duration

As noted previously, an exposure frequency of 150 days/year for a Recreator is conservative and, thus, may overestimate risk. EPA's Supplemental Guidance for Inhalation Risk Assessment notes "an example trespasser/recreational scenario could consist of an exposure… for 100 days per year or less" (US EPA, 2009a). The Risk Assessment Information System (RAIS) Risk Calculator developed under the United States Department of Energy (DOE) Oak Ridge National Laboratory (ORNL) recommends an exposure frequency of 74 days for a Recreator (US DOE, 2013). The selected value of 150 days/year is higher than both of these values and, thus, likely overstates risk.

### 10.1.4 Soil and Sediment Ingestion Rates

The exposure factors used in the risk assessment generally represent high-end "upper percentile" (*e.g.*, 90$^{th}$ or 95$^{th}$ percentile) exposure factors. High-end ingestion rates (100 and 200 mg/day, the 90$^{th}$ percentile) were applied for year-round exposure (350 days/year); however, soil ingestion rates will likely be lower in winter months, when people spend less time outdoors. Data analyzed by EPA indicate that soil intake decreases by 6-55% on poor weather days, when children are more likely to stay inside, compared with good weather days (US EPA, 1994a). Data regarding hand-to-mouth events, which are a primary mechanism by which soil is ingested, indicate that hand-to-mouth frequency is significantly greater indoors than outdoors (US EPA, 2012b). Therefore, risks evaluated with the high-end soil ingestion rates for year-round exposure may over-estimate risks. For example, a recent reanalysis of previous soil ingestion studies estimated a mean of 26 mg/day for children, with a 95$^{th}$ percentile estimated as 79 mg/day (Stanek *et al*., 2012a,b).

### 10.1.5 Skin Surface Area Exposed to Sediment

Although absorption could occur through dermal contact with sediment while wading, the exposed skin surface area may be limited to the feet, rather than the head, hands, forearms, lower legs, and feet, as assumed in the risk assessment. In addition, the time that the skin would contact sediment would likely be very short, because the sediment would wash off in the surface water. Therefore, the risk from dermal contact with sediment is likely to be overestimated in this report.

### 10.1.6 Fish Ingestion Rates

The fish ingestion rates used in this HHRA may be overestimated. Fish population size and fish yield have been studied extensively in North American water bodies and is known to be significantly correlated with the size of the water body (Rounsefell, 1946; Oglesby, 1977; Matuszeka, 1978; Schlesingera and Regiera, 1982; Youngs and Heimbuch, 1982). Additional factors that influence fish population size include temperature, pH, oxygen content, nutrients, vegetation, and the mix of fish species present. However, fish population size can be most simply related to the surface area of a lake. Youngs and Heimbuch (1982) developed the following linear

regression relationship between fish yield and surface area based on a number of North American freshwater lakes and reservoirs:

$$Ln (Y) = 7.01 + 0.83 Ln (A) (r = 0.969)$$

Where Y corresponds to fish yield (kg fresh weight per year), A corresponds to lake surface area (square kilometers [$km^2$]), and Ln refers to the natural logarithm (log base e).

Based on this regression relationship, one can estimate the fish yield of KWL as:

$$Ln (Y) = 7.01 + 0.83 Ln (25 \text{ acres or } 0.1012 \text{ } km^2)$$

$$Yield = 165 \text{ kg fish/year}$$

Assuming that for each fish caught, half of the total fish weight is edible (US EPA, 2011a), the estimated edible yield is 82.7 kg fish/year, or approximately 227 g/day. Using the estimate of 227 g/day and assuming, for example, a local population of 20 anglers, their daily consumption rate could be no more than 11 g/day. Even this estimate based on a population of 20 anglers is likely an overestimate, because not all fish in the annual yield will be the preferred edible species or caught at a size considered edible. This result suggests that anglers who typically consume 26 g/day are likely to fish in a variety of lakes and would not obtain all of their fish from KWL. Thus, the size and fish capacity of KWL indicates that the fish ingestion risks presented in this HHRA may be overestimated.

The adult fish ingestion rate of 26 g/day was also used in the ALM to assess adult lead risks due to fish ingestion. This value represents a 95$^{th}$ percentile ingestion rate; however, it would be more appropriate to use a central tendency estimate of fish ingestion in the ALM, because central tendency estimates of risk are combined in the ALM with the GSD factor to estimate upper percentiles of risk. Thus, fish ingestion risks for adults due to lead may be overestimated in this risk assessment. In contrast, the IEUBK model for young children estimates age-adjusted fish ingestion rates based on the model default assumption that 10% of the child's meat intake comes from fish. These fish ingestion rates[28] represent central tendency estimates of ingestion rates that are more consistent with a 95$^{th}$ percentile estimate of 9 µg/day. Thus, based on fish ingestion rates, the ALM (but not the IEUBK) may overestimate lead risk from fish.

## 10.2 Uncertainty in COPCs

### 10.2.1 COPC Selection

Chemicals were eliminated as COPCs during the screening evaluation (Appendix C-1, Table 2 series). Maximum detected concentrations were compared against generic health-based screening criteria (*e.g.,* RSLs). Chemicals with concentrations below their respective screening criterion do not warrant further evaluation. EPA (1989) uses a screening evaluation to reduce the number of COPCs carried through the risk assessment, because in many cases, risks are driven by a handful of chemicals. Chemicals that were not identified as COPCs are not expected to be major risk contributors, because their maximum concentration is below the RSL that is based on

[28] The fish ingestion rates, which were back-calculated based on the IEUBK output, range from approximately 2.9 µg/day for a 1- to 2-year-old to 4.5 µg/day for a 5- to 6-year-old.

either a $10^{-6}$ risk or an HI of 0.1. Thus, the exclusion of these chemicals is not anticipated to change the conclusions of the risk assessment.

Several compounds were reported with elevated detection limits, some of which exceeded the maximum detected concentration and/or the screening criteria. Depending on the exposure area, the number of compounds for which the maximum detection limit is above the screening criterion but the compound is not a COPC (*i.e.*, the maximum detected concentration is below the screening criterion) ranges from 3-8 compounds in soil, 2-3 compounds in sediment, and 1-18 compounds in surface water. Thus, the elevated detection limits could have resulted in an underestimate of the number of COPCs, which could have resulted in an underestimation of risk.

Thallium was identified as a COPC and was found to be one of the COPCs that contributed most significantly to risk in soil, sediment, and surface water. However, thallium was rarely detected (in approximately 13% of soil samples, 6% of sediment samples, and 10% of surface water samples, across the four exposure areas). Thallium occurs naturally, and the soil EPCs for all exposure areas (0.44-0.85 mg/kg) were below the background soil value (maximum of 1.2 mg/kg) based on data described in Section 4.6. The EPCs for thallium in sediment were below the maximum thallium concentration in Clement Lake sediment (4.9 mg/kg). The EPA soil RSL (0.078 mg/kg) for thallium is also below the background soil level. Thus, it is likely that much of the risk attributed to thallium corresponds to background conditions.

### 10.2.2 Tentatively Identified Compounds

A total of 1,056 TICs were reported in samples from the Waterbodies Unit (Appendix D, Table 1). A total of 14 TICs with published toxicity factors were included in the screening assessment to identify COPCs (Appendix E). The remaining TICs were not evaluated in the HHRA, due to a lack of published toxicity factors. If the unevaluated TICs contribute to risk, then the risks presented in the HHRA could be underestimated.

The EPCs for the TICs were calculated using only the detected concentrations, because if TICs are not detected, they are not reported. For this reason, the EPCs for TICs are likely to be biased high and overestimate risk.

### 10.2.3 Fish Chromium

Fish risks were evaluated assuming 5% Cr(VI) and 100% Cr(VI), similar to the evaluation for soil and sediment. The assumption that 100% of the chromium measured in fish exists as Cr(VI) likely overestimates the risk from fish ingestion. As discussed in Section 10.1.2, chromium in sediment is unlikely to be 100% in the form of Cr(VI). Cr(VI) in fish, if it is present at all, is likely to be less than 100% of the total chromium concentration. Cr(VI) is expected to be reduced to Cr(III) in the GI tract of fish, due to the low pH (*e.g.*, pH in stomach of perch ranges between 3.5 and 4.5) (Solovyev *et al*., 2015). In addition, any Cr(VI) that enters the fish through the gills and is transported through cell membranes will be rapidly reduced to Cr(III) (WHO, 2003).

### 10.2.4 Fish COPCs

The RSLs for the fish COPC screening were calculated using an ingestion rate of 26 g/day and a target HQ of 1.0. If a target HQ of 0.1 was used instead (consistent with the RSLs used for screening for other media), cobalt, nickel, and mercury (as methylmercury) would also have been COPCs for fish. The combined HQ for these compounds would be approximately 0.4 for the child Angler (and lower for the adolescent and adult Anglers, based on a lower ratio of fish ingestion relative to body weight). Furthermore, the target organs for these compounds differ from the existing COPCs in the fish ingestion pathway. Finally, these compounds do not have CSF values and cancer risks would not be calculated. Therefore, inclusion of these compounds as COPCs would not appreciably alter the risk conclusions for the fish ingestion pathway.

## 10.3 Uncertainties in Dermal Absorption

A dermal absorption value of 3% for arsenic in soil was used in this report (US EPA, 2004a). Lowney *et al*. (2007) measured dermal bioavailability of arsenic in soil, in monkeys, and found that dermal absorption of arsenic was less than 1%. Therefore, the dermal absorption value of 3% used for arsenic likely overestimates dermal risks.

Dermal absorption factors were not available for a number of metal COPCs in soil (aluminum, antimony, barium, chromium, cobalt, copper, iron, manganese, thallium, vanadium, zinc, and cyanide). Although dermal risks from these metals were not calculated, dermal absorption of these metals is not a primary route of metal exposure (US EPA, 2007b); thus, this exposure pathway would provide an insignificant contribution to risk.

In addition, default soil absorption values were used for sediment, in the absence of sediment-specific values. The dermal absorption of metals in soil and sediment is dependent on chemical, physical, and biological factors (US EPA, 2004a). Therefore, the use of dermal soil absorption values to evaluate sediment exposures may over- or underestimate dermal risks from sediment exposure.

The dermal exposure route for lead in soil was not evaluated because this exposure route is typically insignificant when compared to ingestion (ATSDR, 2007). EPA's ALM and IEUBK model do not include dermal exposures.

Dermal risks were calculated for six COPCs in surface water that are outside the EPD, based on EPA's mathematical model for calculating absorbed dose: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, bis(2-ethylhexyl)phthalate, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene. EPA (2004a) noted that chemicals outside the EPD may not be absorbed before desquamation (or shedding) of the skin, which would reduce the amount of chemical available for absorption and would, therefore, reduce risks from dermal contact. All six compounds that are outside the EPD were evaluated as COPCs in SL, and benzo(a)pyrene was evaluated in BWL. Due to the uncertainty associated with chemicals outside the EPD, the dermal risks may be overestimated for all receptors at SL and, to a lesser degree, Swimmers at BWL.

## 10.4 Uncertainties in Toxicity Reference Values

In the absence of toxicity reference values for thallium, a PPRTV screening toxicity value was used for the RfD. Although the RfD is derived using current EPA methodology, the available information does not provide enough support to derive a PPRTV toxicity value. Consequently, this PPRTV screening toxicity value has considerably more uncertainty associated with it than other toxicity values from EPA IRIS and PPRTV.

There is some uncertainty associated with the carcinogenicity of Cr(VI) *via* ingestion. The EPA IRIS database does not classify Cr(VI) as carcinogenic *via* the oral route of exposure, due to insufficient data (US EPA, 2003b). However, the IRIS profile for Cr(VI) was last updated in 1998 and is currently under reassessment. In 2011, CalEPA derived an oral CSF for Cr(VI) based on a 2008 study in rats and mice conducted by the National Toxicology Program (CalOEHHA, 2011).

## 10.5 Uncertainties in Lead Risk

### 10.5.1 Target Lead Risk

EPA's guidance for assessing lead at Superfund sites currently uses a target BLL of 10 µg/dL for children, a value recommended by the Centers for Disease Control and Prevention (CDC) in 1991 (US EPA, 1994b). The basis of the CDC's 1991 recommended BLL was protection against decreased IQ and impaired neurobehavioral development (CDC, 1991). EPA's risk reduction goal for impacted sites is to limit the probability of a child's BLL exceeding 10 µg/dL to 5% or less (US EPA, 2012c). In 2012, CDC revised its recommendations regarding childhood blood lead screening based on their conclusion that there is no safe BLL, and, therefore, it is not appropriate to identify a BLL of concern (CDC, 2012). Instead, CDC has replaced the "level of concern" concept for lead (*i.e.*, conclusions regarding exposure levels associated with specific adverse health effects) with a "reference level" based on the statistical distribution of blood lead concentrations in the US population. CDC selected a reference level of 5 µg/dL, which represents the 97.5$^{th}$ percentile of the distribution of BLLs for 1- to 5-year-old children in the US, based on the NHANES surveys conducted in 2005-2006 and 2007-2008 (CDC, 2012). EPA guidance states that "the current scientific literature on lead toxicology and epidemiology provides evidence that adverse health effects are associated with BLLs less than 10 µg/dL" (US EPA, 2016). At the direction of EPA this HHRA used a target BLL of 5 µg/dL for evaluation of both adult and child lead risks (US EPA Region II, 2017c). It has not yet been established whether EPA will continue to use a 5% probability of exceeding any revised target as the definition of unacceptable risk. Thus, there is uncertainty associated with whether lead risks should be characterized as unacceptable if they exceed a probability of 5%.

### 10.5.2 Averaging Time

In the ALM, the adult and adolescent Swimmers have an exposure frequency of 105 days/year and an averaging time of 120 days, because the swimming is assumed to occur during the warmest months of the year (May 15 to September 15). This approach results in a predicted increase in BLL that is the same as would be predicted for a year-long exposure; however, this BLL would decline once the swimming season is over. The effects associated with short-term (*e.g.*, seasonal) elevations in BLL are unknown, because most studies are based on measurements of chronic BLL. In the IEUBK model, the child Recreator was assumed to have

an exposure frequency of 150 days/year and an equivalent averaging time of 150 days. However, for all other receptors and the non-lead COPCs, this exposure was assumed to take place over the course of a year. Thus, BLLs and lead risk for the child Recreator are likely overestimated. The child Swimmer, like the adult and adolescent Swimmers, was assumed to have an exposure frequency of 105 days/year and an averaging time of 120 days (although no adjustment for 105/120 was made in the IEUBK model). This similarly produces a short-term elevation in BLL that would not represent a year-long average BLL. As for the adult and adolescent Swimmers, the effects associated with short-term elevations in BLL for the child Swimmer are unknown. Thus, the lead risk estimates presented in this HHRA for the child Recreator and adult, adolescent, and child Swimmers are considered to be on the conservative, or health-protective, side, and risks are likely overestimated.

### 10.5.3 Child Angler Fish Lead Risks

The IEUBK model was used to evaluate a child Angler who is exposed to lead *via* ingestion of sport-caught fish. The soil concentration input to the model was the KWL weighted soil/sediment EPC. However, the actual soil concentration a child is exposed to could be either higher or lower than this EPC, and the extent to which ingestion of fish from KWL is associated with lead risk depends directly on the child's exposure to lead in soil. For this reason, the risk assessment also estimates the incremental risk due to fish ingestion by the child Angler. As shown in Section 9.4.6, the incremental BLL attributable to fish ingestion was 0.1 μg/dL, which is very small. Although EPA does not support a risk target in terms of an incremental BLL, California has adopted an incremental risk target, which can be considered for comparison. CalOEHHA considers "lead exposures from a specific location that cause a rise in a child's blood lead level by more than 1 μg/dL as significant for purposes of risk assessment" (CalOEHHA, 2007). The BLL increment due to fish ingestion estimated in this risk assessment of 0.1 μg/dL is very small compared to the CalOEHHA risk target of 1 μg/dL.

# 11 Conclusions

This risk assessment characterized the risk to human health from exposure to soil, sediment, and surface water at the Waterbodies Unit. The Waterbodies Unit was divided into four exposure areas: SL, BWL, HC, and KWL. The receptors evaluated in this HHRA included an adult, adolescent, and child Recreator; adult, adolescent, and child Swimmer; and adult, adolescent, and child Angler. Recreators were evaluated for exposure to soil at BWL, HC, and KWL, and to sediment and surface water in all exposure areas. Soil from SL was previously evaluated as part of the FMP HHRA and therefore was not evaluated here. Swimmers were evaluated for exposure to sediment and surface water at the three lakes. Anglers were evaluated for ingestion of fish caught at KWL. Soil exposure pathways included incidental ingestion, dermal contact, and inhalation of VOCs and particulates potentially emitted from soil due to wind erosion. Soil was evaluated in the 0-2 ft depth interval. Sediment exposure pathways included incidental ingestion and dermal contact. Surface water exposure pathways included dermal contact while wading for the Recreators, and ingestion and dermal contact while swimming for the Swimmers.

COPCs for soil and sediment were determined by comparing the detected concentrations to conservative risk-based screening criteria (the lower of the EPA RSL or the NJ RDCSRS). COPCs for surface water were determined by comparing the detected concentrations to EPA RSLs for tap water. Soil COPCs included metals, cyanide, PCB compounds, and PAH compounds. Sediment COPCs included metals, cyanide, PCB compounds, PAH compounds, one VOC, and one TIC. Surface water COPCs included metals, cyanide, PAH compounds, and one SVOC. It should be noted that the COPCs in each medium were not necessarily COPCs in every exposure area.

Risks were evaluated for both cancer and non-cancer effects following EPA guidance, using conservative estimates of exposure that tend to overestimate, rather than underestimate, risk. Risk from exposure to lead in soil was evaluated using blood lead models, as per EPA guidance. Cancer risks are characterized as the incremental probability that an individual will develop cancer over a lifetime due to site-related exposures under the specific exposure scenarios evaluated. EPA's target risk range is given as 1 in 1 million ($1 \times 10^{-6}$) to 1 in 10,000 ($1 \times 10^{-4}$). Non-cancer hazard is expressed as a total HI, and EPA uses a target HI of 1. An HI less than or equal to 1 indicates that adverse non-cancer health effects are not expected, even in susceptible populations. An HI greater than 1 does not mean that adverse health effects will occur, only that further evaluation is warranted. Risk from exposure to lead was evaluated using blood lead models. At the direction of EPA, lead risks are reported as the probability of having a BLL greater than 5 µg/dL. EPA considers lead risks to exceed the target risk threshold if the probability of having a BLL greater than the blood lead target is greater than EPA's goal of 5%.

Chromium was detected in soil and sediment from all exposure areas evaluated. At the direction of EPA, chromium risks were calculated two ways: (1) assuming that Cr(VI) is 5% of the total chromium concentration, and (2) assuming Cr(VI) is 100% of the total chromium concentration.

**Assuming 5% Cr(VI) in Soil and Sediment:** Cancer risks were within EPA's target risk range for the adult and adolescent Recreators in all four exposure areas, and for the child Recreator in SL, BWL, and KWL. Cancer risks for the child Recreator exceeded EPA's target risk range in HC. Non-cancer hazards exceeded EPA's target HI for adolescent Recreators in HC, and child Recreators in BWL and HC. Cancer risks were within EPA's target risk range for the adult and adolescent Swimmer in all three lakes and for the child Swimmer in KWL. Cancer risks for the child Swimmer exceeded EPA's target risk range in SL and BWL. Non-cancer hazards were below EPA's target HI for the adult and adolescent Swimmers, but exceeded the target HI for the child Swimmer, in all three lakes.

**Assuming 100% Cr(VI) in Soil and Sediment:** Cancer risks exceeded EPA's target risk range for all three Recreators in HC and for the child Recreator in BWL. Cancer risks were within EPA's target risk range for the adult and adolescent Swimmers, but exceeded the risk range for the child Swimmer in SL, BWL, and KWL. Non-cancer hazards were as reported above. The assumption that chromium in soil and sediment is 100% Cr(VI) increased risks slightly, and there were four scenarios in which the risk increased from below EPA's target level to greater than EPA's target level. For the child Swimmer in KWL, the cancer risk increased to $3 \times 10^{-4}$. For the child Recreator in BWL, the cancer risk increased to $2 \times 10^{-4}$. For the adult and adolescent Recreators in HC, the cancer risk increased to $2 \times 10^{-4}$ and $3 \times 10^{-4}$, respectively.

Although chromium contributes to elevated risk when evaluated as 100% Cr(VI), these risks are likely overestimated, for several reasons. The FMP soil data indicated that Cr(VI) was on average 5% of the total chromium in any sample (Sherwin-Williams, 2016). Based on the CSM, the source of any Cr(VI) in the HC floodplain was discharges from the FMP that were carried downstream in surface water and sediment. In addition, conditions along HC, such as the high TOC from decaying vegetation, favor a reducing environment that would reduce Cr(VI) to Cr(III). Thus, downstream Cr(VI) concentrations are expected to be less than or equal to those in the source area (the FMP). Because the percentage of Cr(VI) in HC sediment is likely to be no higher than in the source area (FMP soil), the assumption that total chromium is 100% Cr(VI) in soil and sediment likely overestimates risk.

The analytes with the greatest contribution to risk or hazard for receptors with risk or hazard above EPA's targets varied by exposure area and receptor, but generally included the following COPCs.[29]

- **Soil:** Arsenic, lead, thallium
- **Sediment:** Arsenic, lead, thallium, benzo(a)pyrene
- **Surface Water:** Arsenic, chromium(VI), lead, thallium, benzo(a)pyrene

Site data discussed in the uncertainty analysis indicates that thallium risks may be consistent with those associated with natural background concentrations, and the chromium risks in surface water may be significantly overestimated due to the fact that chromium in surface water is not likely to be present as Cr(VI) under the observed surface water pH and Eh conditions. Thus, the primary risk-driving COPCs are arsenic, lead, and benzo(a)pyrene.

[29] This list assumed a 20% threshold for contribution to risk or hazard for a given exposure pathway, based on Appendix C-1, Tables 14.1 and 14.2. Appendix C-1 assumes chromium is 5% Cr(VI) in soil, sediment, and fish. Chromium becomes a significant contributor to risk in soil and sediment when it is assumed that chromium is 100% Cr(VI) (Appendix C-2).

Lead risks were evaluated for exposure to soil and sediment for adult, adolescent, and child Recreators and Swimmers. Risks were also evaluated for exposure to surface water for the child Recreator and Swimmer. Lead risks exceeded EPA's target of 5% for the adult Recreator in HC; the adult Swimmer in BWL and KWL; the child Recreator in all exposure areas; and the child Swimmer in SL, BWL, and KWL.

**Fish Ingestion Risks:** Fish ingestion risks were evaluated two ways: (1) assuming 5% Cr(VI), and (2) assuming 100% Cr(VI). Using the 5% assumption, cancer risks for the adult, adolescent, and child Anglers were $3 \times 10^{-5}$, $3 \times 10^{-5}$, and $5 \times 10^{-5}$, respectively, all within EPA's target risk range. Non-cancer hazard for the adult Angler was 1. Non-cancer hazards for the adolescent and child Anglers were 2 and 3, respectively, above EPA's target HI of 1. Non-cancer hazards were driven by PCBs, and Cr(VI) contributed less than 2% of the HI. The HI for immunological effects was 2 for the child Angler, but at or below 1 for all other endpoints and receptors.

Assuming 100% Cr(VI) increased cancer risks for the adult, adolescent, and child Anglers to $3 \times 10^{-4}$, $4 \times 10^{-4}$, and $6 \times 10^{-4}$, respectively; all were above EPA's target risk range. For all three receptors, chromium was the major contributor (93-99%) to fish ingestion risk. Non-cancer hazards for the adolescent and child Anglers were still 2 and 3, respectively, but the HI increased from 1 to 2 for the adult Angler. Chromium is not considered a primary COPC in fish, however, because Cr(VI) in fish (if present at all) is likely to be much less than 100% of the total chromium concentration. Cr(VI) is expected to be reduced to Cr(III) in the GI tract of fish, due to the low pH (*e.g.*, pH in the stomach of perch ranges between 3.5 and 4.5) (Solovyev *et al*., 2015). In addition, any Cr(VI) that enters the fish through the gills and is transported through cell membranes will be rapidly reduced to Cr(III) (WHO, 2003).

Lead risks for the fish ingestion pathway did not exceed EPA's target of 5% for the adult Angler. Lead risks exceeded the target 5% probability of BLL above 5 µg/dL for the child Angler, but this risk was primarily driven by exposure to soil/sediment. Incremental BLL above baseline was 0.1 µg/dL, which is within the 1 µg/dL increment adopted by California (CalOEHHA, 2007).

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# Tables

# Figures

# Appendix A

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## Sample Locations Used in Risk Assessment

# Appendix B

## Data Used in Risk Assessment

# Appendix C-1

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## Risk Calculations for 5% Chromium Analysis

# Appendix C-2

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## Risk Calculations for 100% Chromium Analysis

# Appendix D

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## Screening for Tentatively Identified Compounds

# Appendix E

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## ProUCL Output

# Appendix F

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## Blood Lead Modeling Results

# Appendix G

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## Fish Sampling Summary

# Appendix A

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## Sample Locations Used in Risk Assessment

**Table 1 Soil Sample Locations Included in HHRA**

| Exposure Area | Location ID |
|---|---|
| BWL | BWSB0001 |
| BWL | BWSB0002 |
| BWL | BWSB0003 |
| BWL | BWSB0004 |
| BWL | BWSB0005 |
| BWL | BWSB0006 |
| BWL | BWSB0007 |
| BWL | BWSB0008 |
| BWL | BWSB0009 |
| BWL | BWSB0011 |
| BWL | BWSB0012 |
| BWL | BWSB0013 |
| BWL | BWSB0014 |
| BWL | BWSB0015 |
| BWL | BWSB0016 |
| BWL | BWSB0017 |
| BWL | BWSB0018 |
| BWL | BWSB0019 |
| BWL | BWSB0020 |
| BWL | BWSB0021 |
| BWL | BWSB0022 |
| BWL | BWSB0023 |
| BWL | BWSB0024 |
| BWL | BWSB0025 |
| BWL | BWSB0026 |
| BWL | BWSB0027 |
| BWL | BWSB0028 |
| BWL | BWSB0029 |
| BWL | BWSB0030 |
| BWL | BWSB0031 |
| BWL | BWSB0032 |
| BWL | BWSB0033 |
| BWL | BWSB0034 |
| BWL | BWSB0035 |
| BWL | BWSB0036 |
| BWL | BWSB0037 |
| BWL | BWSB0038 |
| BWL | BWSB0039 |
| BWL | BWSB0040 |
| BWL | BWSB0041 |
| BWL | BWSB0042 |
| BWL | BWSB0045 |
| BWL | BWSB0046 |
| BWL | BWSB0047 |
| BWL | BWSB0048 |
| BWL | BWSB0049 |
| BWL | BWSB0050 |
| BWL | BWSB0051 |
| BWL | BWSB0052 |
| BWL | BWSB0053 |
| BWL | BWSB0054 |
| BWL | BWSB0057 |
| BWL | BWSB0060 |

**Table 1 Soil Sample Locations Included in HHRA**

| Exposure Area | Location ID |
|---|---|
| BWL | BWSB0061 |
| BWL | BWSB0062 |
| HC | HCSB0001 |
| HC | HCSB0002 |
| HC | HCSB0003 |
| HC | HCSB0004 |
| HC | HCSB0005 |
| HC | HCSB0006 |
| HC | HCSB0007 |
| HC | HCSB0008/15 |
| HC | HCSB0009 |
| HC | HCSB0010 |
| HC | HCSB0011 |
| HC | HCSB0012 |
| HC | HCSB0013 |
| HC | HCSB0014 |
| HC | HCSB0016 |
| HC | HCSB0017 |
| HC | HCSB0018 |
| HC | HCSB0019 |
| HC | HCSB0020 |
| HC | HCSB0021 |
| HC | HCSB0022 |
| HC | HCSB0023 |
| HC | HCSB0024 |
| HC | HCSB0025 |
| HC | HCSB0026 |
| HC | HCSB0027 |
| HC | HCSB0028 |
| HC | HCSB0029 |
| HC | HCSB0030 |
| HC | HCSB0031 |
| HC | HCSB0032 |
| HC | HCSB0033 |
| HC | HCSB0034 |
| HC | HCSB0035 |
| HC | HCSB0036 |
| HC | HCSB0037 |
| HC | HCSB0038 |
| HC | HCSB0039 |
| HC | HCSB0040 |
| HC | HCSB0041 |
| HC | HCSB0042 |
| HC | HCSB0043 |
| HC | HCSB0044 |
| HC | HCSB0045 |
| HC | HCSB0046 |
| HC | HCSB0047 |
| HC | HCSB0048 |
| HC | HCSB0049 |
| HC | HCSB0050 |
| HC | HCSB0051 |
| HC | HCSB0052 |

**Table 1 Soil Sample Locations Included in HHRA**

| Exposure Area | Location ID |
|---|---|
| HC | HCSB0053 |
| HC | HCSB0054 |
| HC | HCSB0055 |
| HC | HCSB0056 |
| HC | HCSB0057 |
| HC | HCSB0058 |
| HC | HCSB0059 |
| HC | HCSB0060 |
| HC | HCSB0061 |
| HC | HCSB0062 |
| HC | HCSB0063 |
| HC | HCSB0064 |
| HC | HCSB0065 |
| HC | HCSB0066 |
| HC | HCSB0067 |
| HC | HCSB0068 |
| HC | HCSB0069 |
| HC | HCSB0070 |
| HC | HCSB0071 |
| HC | HCSB0072 |
| HC | HCSB0073 |
| HC | HCSB0074 |
| HC | HCSB0077 |
| HC | HCSB0078 |
| HC | HCSB0079 |
| HC | HCSB0080 |
| HC | HCSB0081 |
| HC | HCSB0082 |
| HC | HCSB0083 |
| HC | HCSB0084 |
| HC | HCSB0085 |
| HC | HCSB0086 |
| HC | HCSB0087 |
| HC | HCSB0088 |
| HC | HCSB0089 |
| HC | HCSB0090 |
| HC | HCSB0091 |
| HC | HCSB0092 |
| HC | HCSB0093 |
| HC | HCSB0094 |
| HC | HCSB0095 |
| HC | HCSB0099 |
| HC | HCSB0100 |
| HC | HCSB0101 |
| HC | HCSB0102 |
| HC | HCSB0103 |
| HC | HCSB0104 |
| HC | HCSB0105 |
| HC | HCSB0161 |
| HC | HCSB0162 |
| HC | HCSB0163 |
| HC | HCSB0164 |
| HC | HCSB0165 |

**Table 1 Soil Sample Locations Included in HHRA**

| Exposure Area | Location ID |
|---|---|
| HC | HCSB0166 |
| HC | HCSB0167 |
| HC | HCSB0168 |
| HC | HCSB0169 |
| HC | HCSB0170 |
| HC | HCSB0171 |
| HC | HCSB0201 |
| HC | HCSB0202 |
| HC | HCSB0203 |
| HC | HCSB0204 |
| HC | HCSB0205 |
| HC | HCSB0206 |
| HC | HCSB0207 |
| HC | HCSB0208 |
| HC | HCSB0209 |
| HC | HCSB0210 |
| HC | HCSB0219 |
| HC | HCSB0220 |
| HC | HCSB0221 |
| HC | HCSB0222 |
| HC | HCSB0223 |
| HC | HCSB0224 |
| HC | HCSB0225 |
| HC | HCSB0226 |
| HC | HCSB0227 |
| HC | HCSB0228 |
| HC | HCSB0229 |
| HC | HCSB0230 |
| HC | HCSB0231 |
| HC | HCSB0232 |
| HC | HCSB0233 |
| HC | HCSB0234 |
| HC | HCSB0235 |
| HC | HCSB0236 |
| HC | HCSB0237 |
| HC | HCSB0238 |
| HC | HCSB0239 |
| HC | HCSB0240 |
| HC | HCSB0241 |
| HC | HCSB0242 |
| HC | HCSB0243 |
| HC | HCSB0244 |
| HC | HCSB0245 |
| HC | HCSB0246 |
| HC | HCSB0247 |
| HC | HCSB0248 |
| HC | HCSB0249 |
| HC | HCSB0250 |
| HC | HCSB0251 |
| HC | HCSB0252 |
| HC | HCSB0253 |
| HC | HCSB0254 |
| HC | HCSB0255 |

**Table 1 Soil Sample Locations Included in HHRA**

| Exposure Area | Location ID |
|---|---|
| HC | HCSB0256 |
| HC | HCSB0257 |
| HC | HCSB0258 |
| HC | HCSB0269 |
| HC | HCSB0273 |
| HC | HCSB0276 |
| HC | HCSB0277 |
| HC | HCSB0278 |
| HC | HCSB0279 |
| HC | HCSB0280 |
| HC | HCSB0281 |
| HC | HCSB0282 |
| HC | HCSB0283 |
| HC | HCSB0284 |
| HC | HCSB0285 |
| HC | HCSB0286 |
| HC | HCSB0287 |
| HC | HCSB0288 |
| HC | HCSB0289 |
| HC | HCSB0314 |
| HC | HCSB0315 |
| HC | HCSB0316 |
| HC | HCSB0317 |
| HC | HCSB0318 |
| HC | HCSB0319 |
| HC | HCSB0320 |
| HC | HCSB0321 |
| HC | HCSB0326 |
| HC | HCSB0327 |
| HC | HCSB0328 |
| HC | HCSB0329 |
| HC | HCSB0330 |
| HC | HCSB0331 |
| HC | HCSB0332 |
| HC | HCSB0333 |
| HC | HCSB0334 |
| HC | HCSB0335 |
| HC | HCSB0336 |
| HC | HCSB0337 |
| HC | HCSB0338 |
| HC | HCSB0339 |
| HC | HCSB0340 |
| HC | HCSB0341 |
| HC | HCSB0342 |
| HC | HCSB0343 |
| HC | HCSB0344 |
| HC | HCSB0345 |
| HC | HCSB0346 |
| HC | HCSB0347 |
| HC | HCSB0366 |
| HC | HCSB0374 |
| HC | HCSB0375 |
| HC | HCSB0390 |

**Table 1 Soil Sample Locations Included in HHRA**

| Exposure Area | Location ID |
|---|---|
| HC | HCSB0391 |
| HC | HCSB0394 |
| HC | HCSB0398 |
| HC | HCSB0399 |
| HC | HCSB0410 |
| HC | HCSB0412 |
| HC | HCSB0413 |
| HC | HCSB0414 |
| HC | HCSB0415 |
| HC | HCSB0416 |
| HC | HCSB0417 |
| HC | HCSB0418 |
| HC | HCSB0419 |
| HC | HCSB0420 |
| HC | HCSB0421 |
| HC | HCSB0422 |
| HC | HCSB0423 |
| HC | HCSB0424 |
| HC | HCSB0425 |
| HC | HCSB0426 |
| HC | HCSB0428 |
| HC | HCSB0435 |
| HC | HCSB0446 |
| HC | HCSB0458 |
| HC | HCSB0465 |
| HC | HCSB0466 |
| HC | HCSB0472 |
| HC | HCSB0477 |
| HC | HCSB0480 |
| HC | HCSB0482 |
| HC | HCSB0483 |
| HC | HCSB0484 |
| HC | HCSB0485 |
| HC | RSSB0023 |
| HC | RSSB0024 |
| HC | RSSB0025 |
| HC | RSSB0026 |
| HC | RSSB0027 |
| HC | RSSB0028 |
| HC | RSSB0029 |
| HC | RSSB0030 |
| HC | RSSB0077 |
| KWL | HCSB0199 |
| KWL | HCSB0200 |
| KWL | KWSB0001 |
| KWL | KWSB0002 |
| KWL | KWSB0003 |
| KWL | KWSB0004 |
| KWL | KWSB0005 |
| KWL | KWSB0006 |
| KWL | KWSB0007 |
| KWL | KWSB0008 |
| KWL | KWSB0009 |

**Table 1 Soil Sample Locations Included in HHRA**

| Exposure Area | Location ID |
|---|---|
| KWL | KWSB0010 |
| KWL | KWSB0011 |
| KWL | KWSB0012 |
| KWL | KWSB0013 |
| KWL | KWSB0014 |
| KWL | KWSB0015 |
| KWL | KWSB0024 |
| KWL | KWSB0025 |
| KWL | KWSB0026 |
| KWL | KWSB0027 |
| KWL | KWSB0028 |
| KWL | KWSB0029 |
| KWL | KWSB0030 |
| KWL | KWSB0031 |
| KWL | KWSB0032 |
| KWL | KWSB0033 |
| KWL | KWSB0035 |
| KWL | KWSB0036 |
| KWL | KWSB0037 |
| KWL | KWSB0038 |
| KWL | KWSB0039 |
| KWL | KWSB0040 |
| KWL | KWSB0041 |
| KWL | KWSB0042 |
| KWL | KWSB0043 |

**Table 2 Soil Samples Included in HHRA**

| Exposure Area | Location ID | Upper Depth (ft) | Lower Depth (ft) | Sample Date | Field Duplicate | Sample ID |
|---|---|---|---|---|---|---|
| BWL | BWSB0001 | 0 | 2 | 7/18/2005 | | BWSB0001-SS-AA-AE-0 |
| BWL | BWSB0001 | 1.5 | 2 | 12/26/2007 | | BWSB0001-SS-AD-AE-0 |
| BWL | BWSB0001 | 1.5 | 2 | 12/26/2007 | FD | BWSB0001-SS-AD-AE-1 |
| BWL | BWSB0002 | 0 | 1.5 | 7/18/2005 | | BWSB0002-SS-AA-AD-0 |
| BWL | BWSB0003 | 0 | 1.5 | 7/19/2005 | | BWSB0003-SS-AA-AD-0 |
| BWL | BWSB0004 | 0 | 2 | 7/19/2005 | | BWSB0004-SS-AA-AE-0 |
| BWL | BWSB0004 | 0 | 2 | 7/19/2005 | FD | BWSB0004-SS-AA-AE-1 |
| BWL | BWSB0005 | 0 | 2 | 7/19/2005 | | BWSB0005-SS-AA-AE-0 |
| BWL | BWSB0006 | 0 | 1.5 | 7/19/2005 | | BWSB0006-SS-AA-AD-0 |
| BWL | BWSB0007 | 0 | 2 | 7/19/2005 | | BWSB0007-SS-AA-AE-0 |
| BWL | BWSB0008 | 0 | 0.5 | 7/19/2005 | | BWSB0008-SS-AA-AB-0 |
| BWL | BWSB0009 | 0 | 2 | 7/20/2005 | | BWSB0009-SS-AA-AE-0 |
| BWL | BWSB0011 | 0 | 0.5 | 7/21/2005 | | BWSB0011-SS-AA-AB-0 |
| BWL | BWSB0012 | 0 | 0.5 | 7/21/2005 | | BWSB0012-SS-AA-AB-0 |
| BWL | BWSB0013 | 0 | 0.5 | 7/21/2005 | | BWSB0013-SS-AA-AB-0 |
| BWL | BWSB0014 | 0 | 0.5 | 7/21/2005 | | BWSB0014-SS-AA-AB-0 |
| BWL | BWSB0015 | 0 | 0.5 | 7/21/2005 | | BWSB0015-SS-AA-AB-0 |
| BWL | BWSB0016 | 0 | 0.5 | 7/21/2005 | | BWSB0016-SS-AA-AB-0 |
| BWL | BWSB0016 | 1.5 | 2 | 12/19/2007 | | BWSB0016-SS-AD-AE-0 |
| BWL | BWSB0017 | 0 | 0.5 | 7/21/2005 | | BWSB0017-SS-AA-AB-0 |
| BWL | BWSB0018 | 0 | 0.5 | 7/21/2005 | | BWSB0018-SS-AA-AB-0 |
| BWL | BWSB0019 | 0 | 0.5 | 7/21/2005 | | BWSB0019-SS-AA-AB-0 |
| BWL | BWSB0020 | 0 | 0.5 | 8/8/2005 | | BWSB0020-SS-AA-AB-0 |
| BWL | BWSB0021 | 0 | 0.5 | 8/8/2005 | | BWSB0021-SS-AA-AB-0 |
| BWL | BWSB0022 | 0 | 0.5 | 12/19/2007 | | BWSB0022-SS-AA-AB-0 |
| BWL | BWSB0023 | 0 | 0.5 | 12/19/2007 | | BWSB0023-SS-AA-AB-0 |
| BWL | BWSB0023 | 0 | 0.5 | 12/19/2007 | FD | BWSB0023-SS-AA-AB-1 |
| BWL | BWSB0024 | 0 | 0.5 | 12/19/2007 | | BWSB0024-SS-AA-AB-0 |
| BWL | BWSB0025 | 0 | 0.5 | 12/26/2007 | | BWSB0025-SS-AA-AB-0 |
| BWL | BWSB0026 | 0 | 0.5 | 12/26/2007 | | BWSB0026-SS-AA-AB-0 |
| BWL | BWSB0027 | 0 | 0.5 | 12/26/2007 | | BWSB0027-SS-AA-AB-0 |
| BWL | BWSB0028 | 0 | 0.5 | 12/27/2007 | | BWSB0028-SS-AA-AB-0 |
| BWL | BWSB0028 | 0 | 0.5 | 12/27/2007 | FD | BWSB0028-SS-AA-AB-1 |
| BWL | BWSB0029 | 0 | 0.5 | 12/27/2007 | | BWSB0029-SS-AA-AB-0 |
| BWL | BWSB0030 | 0 | 0.5 | 12/27/2007 | | BWSB0030-SS-AA-AB-0 |
| BWL | BWSB0031 | 0 | 0.5 | 12/27/2007 | | BWSB0031-SS-AA-AB-0 |
| BWL | BWSB0032 | 0 | 0.5 | 12/27/2007 | | BWSB0032-SS-AA-AB-0 |
| BWL | BWSB0033 | 0 | 0.5 | 12/27/2007 | | BWSB0033-SS-AA-AB-0 |
| BWL | BWSB0034 | 0 | 0.5 | 12/27/2007 | | BWSB0034-SS-AA-AB-0 |
| BWL | BWSB0035 | 0 | 0.5 | 12/27/2007 | | BWSB0035-SS-AA-AB-0 |
| BWL | BWSB0036 | 0 | 0.5 | 1/2/2008 | | BWSB0036-SS-AA-AB-0 |
| BWL | BWSB0036 | 0 | 0.5 | 1/2/2008 | FD | BWSB0036-SS-AA-AB-1 |
| BWL | BWSB0037 | 0 | 0.5 | 1/2/2008 | | BWSB0037-SS-AA-AB-0 |
| BWL | BWSB0038 | 0 | 0.5 | 1/2/2008 | | BWSB0038-SS-AA-AB-0 |
| BWL | BWSB0039 | 0 | 0.5 | 1/2/2008 | | BWSB0039-SS-AA-AB-0 |
| BWL | BWSB0040 | 0 | 0.5 | 1/2/2008 | | BWSB0040-SS-AA-AB-0 |
| BWL | BWSB0041 | 0 | 0.5 | 1/4/2008 | | BWSB0041-SS-AA-AB-0 |
| BWL | BWSB0042 | 0 | 0.5 | 1/4/2008 | | BWSB0042-SS-AA-AB-0 |
| BWL | BWSB0045 | 0 | 0.5 | 1/4/2008 | | BWSB0045-SS-AA-AB-0 |
| BWL | BWSB0046 | 0 | 0.5 | 1/4/2008 | | BWSB0046-SS-AA-AB-0 |
| BWL | BWSB0047 | 0 | 0.5 | 1/7/2008 | | BWSB0047-SS-AA-AB-0 |
| BWL | BWSB0048 | 0 | 0.5 | 1/7/2008 | | BWSB0048-SS-AA-AB-0 |
| BWL | BWSB0049 | 0 | 0.5 | 1/7/2008 | | BWSB0049-SS-AA-AB-0 |

**Table 2 Soil Samples Included in HHRA**

| Exposure Area | Location ID | Upper Depth (ft) | Lower Depth (ft) | Sample Date | Field Duplicate | Sample ID |
|---|---|---|---|---|---|---|
| BWL | BWSB0050 | 0 | 0.5 | 1/7/2008 | | BWSB0050-SS-AA-AB-0 |
| BWL | BWSB0050 | 0 | 0.5 | 1/7/2008 | FD | BWSB0050-SS-AA-AB-1 |
| BWL | BWSB0051 | 0 | 0.5 | 1/7/2008 | | BWSB0051-SS-AA-AB-0 |
| BWL | BWSB0051 | 0 | 0.5 | 1/7/2008 | FD | BWSB0051-SS-AA-AB-1 |
| BWL | BWSB0052 | 0 | 0.5 | 1/7/2008 | | BWSB0052-SS-AA-AB-0 |
| BWL | BWSB0053 | 0 | 0.5 | 1/7/2008 | | BWSB0053-SS-AA-AB-0 |
| BWL | BWSB0054 | 0 | 0.5 | 1/7/2008 | | BWSB0054-SS-AA-AB-0 |
| BWL | BWSB0057 | 0 | 0.5 | 5/18/2011 | | BWSB0057-SS-AA-AB-0 |
| BWL | BWSB0060 | 0 | 0.5 | 5/19/2011 | | BWSB0060-SS-AA-AB-0 |
| BWL | BWSB0061 | 0 | 0.5 | 5/19/2011 | | BWSB0061-SS-AA-AB-0 |
| BWL | BWSB0062 | 0 | 0.5 | 5/19/2011 | | BWSB0062-SS-AA-AB-0 |
| HC | HCSB0001 | 0 | 0.5 | 6/1/2005 | | HCSB0001-SS-AA-AB-0 |
| HC | HCSB0001 | 1.5 | 2 | 6/1/2005 | | HCSB0001-SS-AD-AE-0 |
| HC | HCSB0002 | 0 | 0.5 | 6/1/2005 | | HCSB0002-SS-AA-AB-0 |
| HC | HCSB0002 | 1 | 1.5 | 6/6/2005 | | HCSB0002-SS-AC-AD-0 |
| HC | HCSB0002 | 1.5 | 2 | 6/1/2005 | | HCSB0002-SS-AD-AE-0 |
| HC | HCSB0003 | 0 | 0.5 | 6/1/2005 | | HCSB0003-SS-AA-AB-0 |
| HC | HCSB0003 | 1 | 1.5 | 6/6/2005 | | HCSB0003-SS-AC-AD-0 |
| HC | HCSB0003 | 1.5 | 2 | 6/1/2005 | | HCSB0003-SS-AD-AE-0 |
| HC | HCSB0004 | 0 | 0.5 | 6/2/2005 | | HCSB0004-SS-AA-AB-0 |
| HC | HCSB0004 | 1 | 1.5 | 6/6/2005 | | HCSB0004-SS-AC-AD-0 |
| HC | HCSB0004 | 1.5 | 2 | 6/2/2005 | | HCSB0004-SS-AD-AE-0 |
| HC | HCSB0005 | 0 | 0.5 | 6/2/2005 | | HCSB0005-SS-AA-AB-0 |
| HC | HCSB0005 | 1.5 | 2 | 6/2/2005 | | HCSB0005-SS-AD-AE-0 |
| HC | HCSB0006 | 0 | 0.5 | 6/2/2005 | | HCSB0006-SS-AA-AB-0 |
| HC | HCSB0006 | 0 | 0.5 | 6/2/2005 | FD | HCSB0006-SS-AA-AB-1 |
| HC | HCSB0006 | 1.5 | 2 | 6/2/2005 | | HCSB0006-SS-AD-AE-0 |
| HC | HCSB0007 | 0 | 0.5 | 6/2/2005 | | HCSB0007-SS-AA-AB-0 |
| HC | HCSB0007 | 1.5 | 2 | 6/2/2005 | | HCSB0007-SS-AD-AE-0 |
| HC | HCSB0008/15 | 0 | 0.5 | 6/2/2005 | | HCSB0008-SS-AA-AB-0 |
| HC | HCSB0008/15 | 0 | 0.5 | 6/6/2005 | | HCSB0015-SS-AA-AB-0 |
| HC | HCSB0008/15 | 1 | 1.5 | 6/6/2005 | | HCSB0015-SS-AC-AD-0 |
| HC | HCSB0009 | 0 | 0.5 | 6/3/2005 | | HCSB0009-SS-AA-AB-0 |
| HC | HCSB0010 | 0 | 0.5 | 6/3/2005 | | HCSB0010-SS-AA-AB-0 |
| HC | HCSB0011 | 0 | 0.5 | 6/3/2005 | | HCSB0011-SS-AA-AB-0 |
| HC | HCSB0012 | 0 | 0.5 | 6/3/2005 | | HCSB0012-SS-AA-AB-0 |
| HC | HCSB0013 | 0 | 0.5 | 6/3/2005 | | HCSB0013-SS-AA-AB-0 |
| HC | HCSB0014 | 0 | 0.5 | 6/3/2005 | | HCSB0014-SS-AA-AB-0 |
| HC | HCSB0014 | 1 | 1.5 | 6/3/2005 | | HCSB0014-SS-AC-AD-0 |
| HC | HCSB0016 | 0 | 0.5 | 6/6/2005 | | HCSB0016-SS-AA-AB-0 |
| HC | HCSB0016 | 1.5 | 2 | 6/20/2006 | | HCSB0016-SS-AD-AE-0 |
| HC | HCSB0017 | 0 | 0.5 | 6/6/2005 | | HCSB0017-SS-AA-AB-0 |
| HC | HCSB0018 | 0 | 0.5 | 6/6/2005 | | HCSB0018-SS-AA-AB-0 |
| HC | HCSB0019 | 0 | 0.5 | 6/6/2005 | | HCSB0019-SS-AA-AB-0 |
| HC | HCSB0020 | 0 | 0.5 | 6/6/2005 | | HCSB0020-SS-AA-AB-0 |
| HC | HCSB0021 | 0 | 0.5 | 6/6/2005 | | HCSB0021-SS-AA-AB-0 |
| HC | HCSB0022 | 0 | 0.5 | 6/6/2005 | | HCSB0022-SS-AA-AB-0 |
| HC | HCSB0023 | 0 | 0.5 | 6/6/2005 | | HCSB0023-SS-AA-AB-0 |
| HC | HCSB0024 | 0 | 0.5 | 6/6/2005 | | HCSB0024-SS-AA-AB-0 |
| HC | HCSB0025 | 0 | 0.5 | 6/6/2005 | | HCSB0025-SS-AA-AB-0 |
| HC | HCSB0026 | 0 | 0.5 | 6/6/2005 | | HCSB0026-SS-AA-AB-0 |
| HC | HCSB0027 | 0 | 0.5 | 6/6/2005 | | HCSB0027-SS-AA-AB-0 |
| HC | HCSB0027 | 1 | 1.5 | 6/6/2005 | | HCSB0027-SS-AC-AD-0 |

**Table 2 Soil Samples Included in HHRA**

| Exposure Area | Location ID | Upper Depth (ft) | Lower Depth (ft) | Sample Date | Field Duplicate | Sample ID |
|---|---|---|---|---|---|---|
| HC | HCSB0027 | 1 | 1.5 | 6/6/2005 | FD | HCSB0027-SS-AC-AD-1 |
| HC | HCSB0028 | 0 | 0.5 | 6/6/2005 | | HCSB0028-SS-AA-AB-0 |
| HC | HCSB0029 | 0 | 0.5 | 6/6/2005 | | HCSB0029-SS-AA-AB-0 |
| HC | HCSB0030 | 0 | 0.5 | 6/6/2005 | | HCSB0030-SS-AA-AB-0 |
| HC | HCSB0031 | 0 | 2 | 6/6/2005 | | HCSB0031-SS-AA-AE-0 |
| HC | HCSB0032 | 0 | 0.5 | 6/7/2005 | | HCSB0032-SS-AA-AB-0 |
| HC | HCSB0032 | 0 | 0.5 | 6/7/2005 | FD | HCSB0032-SS-AA-AB-1 |
| HC | HCSB0033 | 0 | 0.5 | 6/7/2005 | | HCSB0033-SS-AA-AB-0 |
| HC | HCSB0034 | 0 | 0.5 | 6/7/2005 | | HCSB0034-SS-AA-AB-0 |
| HC | HCSB0035 | 0 | 0.5 | 6/7/2005 | | HCSB0035-SS-AA-AB-0 |
| HC | HCSB0036 | 0 | 0.5 | 6/7/2005 | | HCSB0036-SS-AA-AB-0 |
| HC | HCSB0037 | 0 | 0.5 | 6/7/2005 | | HCSB0037-SS-AA-AB-0 |
| HC | HCSB0038 | 0 | 0.5 | 6/7/2005 | | HCSB0038-SS-AA-AB-0 |
| HC | HCSB0039 | 0 | 0.5 | 6/7/2005 | | HCSB0039-SS-AA-AB-0 |
| HC | HCSB0040 | 0 | 0.5 | 6/8/2005 | | HCSB0040-SS-AA-AB-0 |
| HC | HCSB0040 | 0 | 0.5 | 6/8/2005 | FD | HCSB0040-SS-AA-AB-1 |
| HC | HCSB0041 | 0 | 0.5 | 6/8/2005 | | HCSB0041-SS-AA-AB-0 |
| HC | HCSB0042 | 0 | 0.5 | 6/8/2005 | | HCSB0042-SS-AA-AB-0 |
| HC | HCSB0043 | 0 | 1.5 | 6/8/2005 | | HCSB0043-SS-AA-AD-0 |
| HC | HCSB0044 | 0 | 0.5 | 6/8/2005 | | HCSB0044-SS-AA-AB-0 |
| HC | HCSB0045 | 0 | 0.5 | 6/8/2005 | | HCSB0045-SS-AA-AB-0 |
| HC | HCSB0046 | 0 | 0.5 | 6/8/2005 | | HCSB0046-SS-AA-AB-0 |
| HC | HCSB0047 | 0 | 0.5 | 6/8/2005 | | HCSB0047-SS-AA-AB-0 |
| HC | HCSB0048 | 0 | 0.5 | 6/8/2005 | | HCSB0048-SS-AA-AB-0 |
| HC | HCSB0049 | 0 | 0.5 | 6/8/2005 | | HCSB0049-SS-AA-AB-0 |
| HC | HCSB0050 | 0 | 0.5 | 6/8/2005 | | HCSB0050-SS-AA-AB-0 |
| HC | HCSB0051 | 0 | 0.5 | 6/8/2005 | | HCSB0051-SS-AA-AB-0 |
| HC | HCSB0052 | 0 | 1.5 | 6/8/2005 | | HCSB0052-SS-AA-AD-0 |
| HC | HCSB0053 | 0 | 1.5 | 6/8/2005 | | HCSB0053-SS-AA-AD-0 |
| HC | HCSB0054 | 0 | 1.5 | 6/8/2005 | | HCSB0054-SS-AA-AD-0 |
| HC | HCSB0055 | 0 | 0.5 | 6/9/2005 | | HCSB0055-SS-AA-AB-0 |
| HC | HCSB0056 | 0 | 0.5 | 6/9/2005 | | HCSB0056-SS-AA-AB-0 |
| HC | HCSB0057 | 0 | 0.5 | 6/9/2005 | | HCSB0057-SS-AA-AB-0 |
| HC | HCSB0058 | 0 | 0.5 | 6/9/2005 | | HCSB0058-SS-AA-AB-0 |
| HC | HCSB0059 | 0 | 0.5 | 6/9/2005 | | HCSB0059-SS-AA-AB-0 |
| HC | HCSB0059 | 0 | 0.5 | 6/9/2005 | FD | HCSB0059-SS-AA-AB-1 |
| HC | HCSB0060 | 0 | 0.5 | 6/9/2005 | | HCSB0060-SS-AA-AB-0 |
| HC | HCSB0061 | 0 | 0.5 | 6/9/2005 | | HCSB0061-SS-AA-AB-0 |
| HC | HCSB0062 | 0 | 0.5 | 6/9/2005 | | HCSB0062-SS-AA-AB-0 |
| HC | HCSB0063 | 0 | 0.5 | 6/9/2005 | | HCSB0063-SS-AA-AB-0 |
| HC | HCSB0064 | 0 | 0.5 | 6/9/2005 | | HCSB0064-SS-AA-AB-0 |
| HC | HCSB0065 | 0 | 0.5 | 6/9/2005 | | HCSB0065-SS-AA-AB-0 |
| HC | HCSB0066 | 0 | 0.5 | 6/9/2005 | | HCSB0066-SS-AA-AB-0 |
| HC | HCSB0067 | 0 | 0.5 | 6/13/2005 | | HCSB0067-SS-AA-AB-0 |
| HC | HCSB0068 | 0 | 0.5 | 6/13/2005 | | HCSB0068-SS-AA-AB-0 |
| HC | HCSB0069 | 0 | 0.5 | 6/13/2005 | | HCSB0069-SS-AA-AB-0 |
| HC | HCSB0070 | 0 | 0.5 | 6/13/2005 | | HCSB0070-SS-AA-AB-0 |
| HC | HCSB0071 | 0 | 0.5 | 6/13/2005 | | HCSB0071-SS-AA-AB-0 |
| HC | HCSB0072 | 0 | 0.5 | 6/13/2005 | | HCSB0072-SS-AA-AB-0 |
| HC | HCSB0073 | 0 | 1 | 6/13/2005 | | HCSB0073-SS-AA-AC-0 |
| HC | HCSB0073 | 0 | 1 | 6/13/2005 | FD | HCSB0073-SS-AA-AC-1 |
| HC | HCSB0074 | 0 | 2 | 6/13/2005 | | HCSB0074-SS-AA-AE-0 |
| HC | HCSB0077 | 0 | 0.5 | 6/14/2005 | | HCSB0077-SS-AA-AB-0 |

**Table 2 Soil Samples Included in HHRA**

| Exposure Area | Location ID | Upper Depth (ft) | Lower Depth (ft) | Sample Date | Field Duplicate | Sample ID |
|---|---|---|---|---|---|---|
| HC | HCSB0078 | 0 | 0.5 | 6/14/2005 | | HCSB0078-SS-AA-AB-0 |
| HC | HCSB0079 | 0 | 2 | 6/15/2005 | | HCSB0079-SS-AA-AE-0 |
| HC | HCSB0080 | 0 | 2 | 6/15/2005 | | HCSB0080-SS-AA-AE-0 |
| HC | HCSB0081 | 0 | 2 | 6/15/2005 | | HCSB0081-SS-AA-AE-0 |
| HC | HCSB0082 | 0 | 2 | 6/15/2005 | | HCSB0082-SS-AA-AE-0 |
| HC | HCSB0083 | 0 | 2 | 6/15/2005 | | HCSB0083-SS-AA-AE-0 |
| HC | HCSB0084 | 0 | 2 | 6/15/2005 | | HCSB0084-SS-AA-AE-0 |
| HC | HCSB0085 | 0 | 1.5 | 6/15/2005 | | HCSB0085-SS-AA-AD-0 |
| HC | HCSB0085 | 0 | 1.5 | 6/15/2005 | FD | HCSB0085-SS-AA-AD-1 |
| HC | HCSB0086 | 0 | 0.5 | 6/16/2005 | | HCSB0086-SS-AA-AB-0 |
| HC | HCSB0087 | 0 | 0.5 | 6/16/2005 | | HCSB0087-SS-AA-AB-0 |
| HC | HCSB0088 | 0 | 0.5 | 6/16/2005 | | HCSB0088-SS-AA-AB-0 |
| HC | HCSB0089 | 0 | 0.5 | 6/16/2005 | | HCSB0089-SS-AA-AB-0 |
| HC | HCSB0090 | 0 | 0.5 | 6/16/2005 | | HCSB0090-SS-AA-AB-0 |
| HC | HCSB0091 | 0 | 0.5 | 6/16/2005 | | HCSB0091-SS-AA-AB-0 |
| HC | HCSB0092 | 0 | 0.5 | 6/16/2005 | | HCSB0092-SS-AA-AB-0 |
| HC | HCSB0093 | 0 | 0.5 | 6/16/2005 | | HCSB0093-SS-AA-AB-0 |
| HC | HCSB0094 | 0 | 0.5 | 6/16/2005 | | HCSB0094-SS-AA-AB-0 |
| HC | HCSB0095 | 0 | 0.5 | 6/16/2005 | | HCSB0095-SS-AA-AB-0 |
| HC | HCSB0099 | 0 | 0.5 | 6/20/2005 | | HCSB0099-SS-AA-AB-0 |
| HC | HCSB0100 | 0 | 0.5 | 6/20/2005 | | HCSB0100-SS-AA-AB-0 |
| HC | HCSB0101 | 0 | 0.5 | 6/20/2005 | | HCSB0101-SS-AA-AB-0 |
| HC | HCSB0102 | 0 | 0.5 | 6/20/2005 | | HCSB0102-SS-AA-AB-0 |
| HC | HCSB0103 | 0 | 0.5 | 6/20/2005 | | HCSB0103-SS-AA-AB-0 |
| HC | HCSB0104 | 0 | 0.5 | 6/20/2005 | | HCSB0104-SS-AA-AB-0 |
| HC | HCSB0105 | 0 | 0.5 | 6/20/2005 | | HCSB0105-SS-AA-AB-0 |
| HC | HCSB0161 | 0 | 0.5 | 7/12/2005 | | HCSB0161-SS-AA-AB-0 |
| HC | HCSB0162 | 0 | 0.5 | 7/12/2005 | | HCSB0162-SS-AA-AB-0 |
| HC | HCSB0163 | 0 | 0.5 | 7/12/2005 | | HCSB0163-SS-AA-AB-0 |
| HC | HCSB0164 | 0 | 0.5 | 7/12/2005 | | HCSB0164-SS-AA-AB-0 |
| HC | HCSB0165 | 0 | 0.5 | 7/13/2005 | | HCSB0165-SS-AA-AB-0 |
| HC | HCSB0166 | 0 | 0.5 | 7/13/2005 | | HCSB0166-SS-AA-AB-0 |
| HC | HCSB0167 | 0 | 0.5 | 7/13/2005 | | HCSB0167-SS-AA-AB-0 |
| HC | HCSB0168 | 0 | 0.5 | 7/13/2005 | | HCSB0168-SS-AA-AB-0 |
| HC | HCSB0169 | 0 | 0.5 | 7/13/2005 | | HCSB0169-SS-AA-AB-0 |
| HC | HCSB0170 | 0 | 0.5 | 7/13/2005 | | HCSB0170-SS-AA-AB-0 |
| HC | HCSB0171 | 0 | 0.5 | 7/13/2005 | | HCSB0171-SS-AA-AB-0 |
| HC | HCSB0171 | 0 | 0.5 | 7/13/2005 | FD | HCSB0171-SS-AA-AB-1 |
| HC | HCSB0201 | 0 | 2 | 7/27/2005 | | HCSB0201-SS-AA-AE-0 |
| HC | HCSB0202 | 0 | 0.5 | 7/27/2005 | | HCSB0202-SS-AA-AB-0 |
| HC | HCSB0203 | 0 | 0.5 | 8/1/2005 | | HCSB0203-SS-AA-AB-0 |
| HC | HCSB0204 | 0 | 0.5 | 8/1/2005 | | HCSB0204-SS-AA-AB-0 |
| HC | HCSB0205 | 0 | 0.5 | 8/1/2005 | | HCSB0205-SS-AA-AB-0 |
| HC | HCSB0206 | 0 | 0.5 | 8/1/2005 | | HCSB0206-SS-AA-AB-0 |
| HC | HCSB0207 | 0 | 0.5 | 8/1/2005 | | HCSB0207-SS-AA-AB-0 |
| HC | HCSB0208 | 0 | 0.5 | 8/1/2005 | | HCSB0208-SS-AA-AB-0 |
| HC | HCSB0209 | 0 | 0.5 | 8/1/2005 | | HCSB0209-SS-AA-AB-0 |
| HC | HCSB0210 | 0 | 0.5 | 8/1/2005 | | HCSB0210-SS-AA-AB-0 |
| HC | HCSB0219 | 0 | 0.5 | 6/21/2006 | | HCSB0219-SS-AA-AB-0 |
| HC | HCSB0219 | 1.5 | 2 | 6/21/2006 | | HCSB0219-SS-AD-AE-0 |
| HC | HCSB0220 | 0 | 0.5 | 6/21/2006 | | HCSB0220-SS-AA-AB-0 |
| HC | HCSB0220 | 1.5 | 2 | 6/21/2006 | | HCSB0220-SS-AD-AE-0 |
| HC | HCSB0221 | 0 | 0.5 | 6/27/2006 | | HCSB0221-SS-AA-AB-0 |

**Table 2 Soil Samples Included in HHRA**

| Exposure Area | Location ID | Upper Depth (ft) | Lower Depth (ft) | Sample Date | Field Duplicate | Sample ID |
|---|---|---|---|---|---|---|
| HC | HCSB0222 | 0 | 0.5 | 6/27/2006 | | HCSB0222-SS-AA-AB-0 |
| HC | HCSB0222 | 0 | 0.5 | 6/27/2006 | FD | HCSB0222-SS-AA-AB-1 |
| HC | HCSB0223 | 0 | 0.5 | 7/6/2006 | | HCSB0223-SS-AA-AB-0 |
| HC | HCSB0223 | 1.5 | 2 | 6/27/2006 | | HCSB0223-SS-AD-AE-0 |
| HC | HCSB0224 | 0 | 0.5 | 6/27/2006 | | HCSB0224-SS-AA-AB-0 |
| HC | HCSB0225 | 0 | 0.5 | 6/28/2006 | | HCSB0225-SS-AA-AB-0 |
| HC | HCSB0225 | 1.5 | 2 | 6/29/2006 | | HCSB0225-SS-AD-AE-0 |
| HC | HCSB0226 | 0 | 0.5 | 6/28/2006 | | HCSB0226-SS-AA-AB-0 |
| HC | HCSB0227 | 0 | 0.5 | 6/28/2006 | | HCSB0227-SS-AA-AB-0 |
| HC | HCSB0228 | 0 | 0.5 | 6/29/2006 | | HCSB0228-SS-AA-AB-0 |
| HC | HCSB0229 | 0 | 0.5 | 6/29/2006 | | HCSB0229-SS-AA-AB-0 |
| HC | HCSB0230 | 0 | 0.5 | 6/29/2006 | | HCSB0230-SS-AA-AB-0 |
| HC | HCSB0230 | 0 | 0.5 | 6/29/2006 | FD | HCSB0230-SS-AA-AB-1 |
| HC | HCSB0231 | 0 | 0.5 | 7/5/2006 | | HCSB0231-SS-AA-AB-0 |
| HC | HCSB0232 | 0 | 0.5 | 7/5/2006 | | HCSB0232-SS-AA-AB-0 |
| HC | HCSB0233 | 0 | 0.5 | 7/6/2006 | | HCSB0233-SS-AA-AB-0 |
| HC | HCSB0234 | 0 | 0.5 | 7/6/2006 | | HCSB0234-SS-AA-AB-0 |
| HC | HCSB0234 | 0 | 0.5 | 7/6/2006 | FD | HCSB0234-SS-AA-AB-1 |
| HC | HCSB0234 | 1 | 1.5 | 7/6/2006 | | HCSB0234-SS-AC-AD-0 |
| HC | HCSB0235 | 0 | 0.5 | 7/6/2006 | | HCSB0235-SS-AA-AB-0 |
| HC | HCSB0236 | 0 | 0.5 | 7/6/2006 | | HCSB0236-SS-AA-AB-0 |
| HC | HCSB0237 | 0 | 0.5 | 7/7/2006 | | HCSB0237-SS-AA-AB-0 |
| HC | HCSB0238 | 0 | 0.5 | 7/7/2006 | | HCSB0238-SS-AA-AB-0 |
| HC | HCSB0239 | 0 | 0.5 | 7/7/2006 | | HCSB0239-SS-AA-AB-0 |
| HC | HCSB0240 | 0 | 0.5 | 7/10/2006 | | HCSB0240-SS-AA-AB-0 |
| HC | HCSB0241 | 0 | 0.5 | 7/10/2006 | | HCSB0241-SS-AA-AB-0 |
| HC | HCSB0242 | 0 | 0.5 | 7/10/2006 | | HCSB0242-SS-AA-AB-0 |
| HC | HCSB0242 | 0 | 0.5 | 7/10/2006 | FD | HCSB0242-SS-AA-AB-1 |
| HC | HCSB0243 | 0 | 0.5 | 7/10/2006 | | HCSB0243-SS-AA-AB-0 |
| HC | HCSB0244 | 0 | 0.5 | 7/10/2006 | | HCSB0244-SS-AA-AB-0 |
| HC | HCSB0244 | 1.5 | 2 | 7/10/2006 | | HCSB0244-SS-AD-AE-0 |
| HC | HCSB0245 | 0 | 0.5 | 7/11/2006 | | HCSB0245-SS-AA-AB-0 |
| HC | HCSB0246 | 0 | 0.5 | 7/11/2006 | | HCSB0246-SS-AA-AB-0 |
| HC | HCSB0247 | 0 | 0.5 | 7/11/2006 | | HCSB0247-SS-AA-AB-0 |
| HC | HCSB0248 | 0 | 0.5 | 7/11/2006 | | HCSB0248-SS-AA-AB-0 |
| HC | HCSB0249 | 0 | 0.5 | 7/11/2006 | | HCSB0249-SS-AA-AB-0 |
| HC | HCSB0250 | 0 | 0.5 | 7/12/2006 | | HCSB0250-SS-AA-AB-0 |
| HC | HCSB0251 | 0 | 0.5 | 7/12/2006 | | HCSB0251-SS-AA-AB-0 |
| HC | HCSB0252 | 0 | 0.5 | 7/12/2006 | | HCSB0252-SS-AA-AB-0 |
| HC | HCSB0253 | 0 | 0.5 | 7/17/2006 | | HCSB0253-SS-AA-AB-0 |
| HC | HCSB0254 | 0 | 0.5 | 7/17/2006 | | HCSB0254-SS-AA-AB-0 |
| HC | HCSB0254 | 0 | 0.5 | 7/17/2006 | FD | HCSB0254-SS-AA-AB-1 |
| HC | HCSB0255 | 0 | 0.5 | 7/13/2006 | | HCSB0255-SS-AA-AB-0 |
| HC | HCSB0256 | 0 | 0.5 | 7/13/2006 | | HCSB0256-SS-AA-AB-0 |
| HC | HCSB0257 | 0 | 0.5 | 7/17/2006 | | HCSB0257-SS-AA-AB-0 |
| HC | HCSB0258 | 0 | 0.5 | 7/17/2006 | | HCSB0258-SS-AA-AB-0 |
| HC | HCSB0269 | 0 | 0.5 | 7/25/2006 | | HCSB0269-SS-AA-AB-0 |
| HC | HCSB0269 | 0.5 | 1 | 7/25/2006 | | HCSB0269-SS-AB-AC-0 |
| HC | HCSB0273 | 0 | 0.5 | 7/26/2006 | | HCSB0273-SS-AA-AB-0 |
| HC | HCSB0276 | 0 | 0.5 | 7/27/2006 | | HCSB0276-SS-AA-AB-0 |
| HC | HCSB0277 | 0 | 0.5 | 7/31/2006 | | HCSB0277-SS-AA-AB-0 |
| HC | HCSB0278 | 0 | 0.5 | 7/31/2006 | | HCSB0278-SS-AA-AB-0 |
| HC | HCSB0279 | 0 | 0.5 | 7/31/2006 | | HCSB0279-SS-AA-AB-0 |

**Table 2 Soil Samples Included in HHRA**

| Exposure Area | Location ID | Upper Depth (ft) | Lower Depth (ft) | Sample Date | Field Duplicate | Sample ID |
|---|---|---|---|---|---|---|
| HC | HCSB0280 | 0 | 0.5 | 7/31/2006 | | HCSB0280-SS-AA-AB-0 |
| HC | HCSB0280 | 0 | 0.5 | 7/31/2006 | FD | HCSB0280-SS-AA-AB-1 |
| HC | HCSB0281 | 0 | 0.5 | 8/1/2006 | | HCSB0281-SS-AA-AB-0 |
| HC | HCSB0282 | 0 | 0.5 | 8/1/2006 | | HCSB0282-SS-AA-AB-0 |
| HC | HCSB0283 | 0 | 0.5 | 8/1/2006 | | HCSB0283-SS-AA-AB-0 |
| HC | HCSB0283 | 0 | 0.5 | 8/1/2006 | FD | HCSB0283-SS-AA-AB-1 |
| HC | HCSB0284 | 0 | 0.5 | 8/1/2006 | | HCSB0284-SS-AA-AB-0 |
| HC | HCSB0285 | 0 | 0.5 | 8/1/2006 | | HCSB0285-SS-AA-AB-0 |
| HC | HCSB0286 | 0 | 0.5 | 8/2/2006 | | HCSB0286-SS-AA-AB-0 |
| HC | HCSB0287 | 0 | 0.5 | 8/2/2006 | | HCSB0287-SS-AA-AB-0 |
| HC | HCSB0288 | 0 | 0.5 | 8/2/2006 | | HCSB0288-SS-AA-AB-0 |
| HC | HCSB0289 | 0 | 0.5 | 8/2/2006 | | HCSB0289-SS-AA-AB-0 |
| HC | HCSB0314 | 0 | 0.5 | 8/21/2006 | | HCSB0314-SS-AA-AB-0 |
| HC | HCSB0314 | 0 | 0.5 | 8/21/2006 | FD | HCSB0314-SS-AA-AB-1 |
| HC | HCSB0315 | 0 | 0.5 | 8/21/2006 | | HCSB0315-SS-AA-AB-0 |
| HC | HCSB0316 | 0 | 0.5 | 8/21/2006 | | HCSB0316-SS-AA-AB-0 |
| HC | HCSB0317 | 0 | 0.5 | 8/21/2006 | | HCSB0317-SS-AA-AB-0 |
| HC | HCSB0318 | 0 | 0.5 | 8/21/2006 | | HCSB0318-SS-AA-AB-0 |
| HC | HCSB0319 | 0 | 0.5 | 8/21/2006 | | HCSB0319-SS-AA-AB-0 |
| HC | HCSB0320 | 0 | 0.5 | 8/21/2006 | | HCSB0320-SS-AA-AB-0 |
| HC | HCSB0321 | 0 | 0.5 | 8/21/2006 | | HCSB0321-SS-AA-AB-0 |
| HC | HCSB0326 | 0 | 0.5 | 8/22/2006 | | HCSB0326-SS-AA-AB-0 |
| HC | HCSB0326 | 0 | 0.5 | 8/22/2006 | FD | HCSB0326-SS-AA-AB-1 |
| HC | HCSB0327 | 0 | 0.5 | 8/22/2006 | | HCSB0327-SS-AA-AB-0 |
| HC | HCSB0328 | 0 | 0.5 | 8/23/2006 | | HCSB0328-SS-AA-AB-0 |
| HC | HCSB0329 | 0 | 0.5 | 8/23/2006 | | HCSB0329-SS-AA-AB-0 |
| HC | HCSB0329 | 0 | 0.5 | 8/23/2006 | FD | HCSB0329-SS-AA-AB-1 |
| HC | HCSB0330 | 0 | 0.5 | 8/23/2006 | | HCSB0330-SS-AA-AB-0 |
| HC | HCSB0331 | 0 | 0.5 | 8/23/2006 | | HCSB0331-SS-AA-AB-0 |
| HC | HCSB0332 | 0 | 0.5 | 8/23/2006 | | HCSB0332-SS-AA-AB-0 |
| HC | HCSB0333 | 0 | 0.5 | 8/23/2006 | | HCSB0333-SS-AA-AB-0 |
| HC | HCSB0334 | 0 | 0.5 | 8/23/2006 | | HCSB0334-SS-AA-AB-0 |
| HC | HCSB0335 | 0 | 0.5 | 8/24/2006 | | HCSB0335-SS-AA-AB-0 |
| HC | HCSB0335 | 0 | 0.5 | 8/24/2006 | FD | HCSB0335-SS-AA-AB-1 |
| HC | HCSB0336 | 0 | 0.5 | 8/24/2006 | | HCSB0336-SS-AA-AB-0 |
| HC | HCSB0337 | 0 | 0.5 | 8/24/2006 | | HCSB0337-SS-AA-AB-0 |
| HC | HCSB0338 | 0 | 0.5 | 8/24/2006 | | HCSB0338-SS-AA-AB-0 |
| HC | HCSB0339 | 0 | 0.5 | 8/24/2006 | | HCSB0339-SS-AA-AB-0 |
| HC | HCSB0340 | 0 | 0.5 | 8/28/2006 | | HCSB0340-SS-AA-AB-0 |
| HC | HCSB0340 | 0 | 0.5 | 8/28/2006 | FD | HCSB0340-SS-AA-AB-1 |
| HC | HCSB0341 | 0 | 0.5 | 8/28/2006 | | HCSB0341-SS-AA-AB-0 |
| HC | HCSB0342 | 0 | 0.5 | 8/28/2006 | | HCSB0342-SS-AA-AB-0 |
| HC | HCSB0343 | 0 | 0.5 | 8/28/2006 | | HCSB0343-SS-AA-AB-0 |
| HC | HCSB0344 | 0 | 0.5 | 8/28/2006 | | HCSB0344-SS-AA-AB-0 |
| HC | HCSB0345 | 0 | 0.5 | 8/28/2006 | | HCSB0345-SS-AA-AB-0 |
| HC | HCSB0346 | 0 | 0.5 | 8/28/2006 | | HCSB0346-SS-AA-AB-0 |
| HC | HCSB0347 | 0 | 0.5 | 9/12/2006 | | HCSB0347-SS-AA-AB-0 |
| HC | HCSB0347 | 0 | 0.5 | 9/12/2006 | FD | HCSB0347-SS-AA-AB-1 |
| HC | HCSB0366 | 0 | 0.5 | 9/19/2006 | | HCSB0366-SS-AA-AB-0 |
| HC | HCSB0366 | 0 | 0.5 | 9/19/2006 | FD | HCSB0366-SS-AA-AB-1 |
| HC | HCSB0374 | 1 | 1.5 | 11/14/2006 | | HCSB0374-SS-AC-AD-0 |
| HC | HCSB0375 | 0 | 0.5 | 11/14/2006 | | HCSB0375-SS-AA-AB-0 |
| HC | HCSB0375 | 1 | 1.5 | 11/14/2006 | | HCSB0375-SS-AC-AD-0 |

**Table 2 Soil Samples Included in HHRA**

| Exposure Area | Location ID | Upper Depth (ft) | Lower Depth (ft) | Sample Date | Field Duplicate | Sample ID |
|---|---|---|---|---|---|---|
| HC | HCSB0390 | 0 | 0.5 | 4/14/2008 | | HCSB0390-SS-AA-AB-0 |
| HC | HCSB0391 | 0 | 0.5 | 4/14/2008 | | HCSB0391-SS-AA-AB-0 |
| HC | HCSB0394 | 0 | 0.5 | 4/15/2008 | | HCSB0394-SS-AA-AB-0 |
| HC | HCSB0398 | 0 | 0.5 | 4/15/2008 | | HCSB0398-SS-AA-AB-0 |
| HC | HCSB0399 | 0 | 0.5 | 4/16/2008 | | HCSB0399-SS-AA-AB-0 |
| HC | HCSB0410 | 0 | 0.5 | 4/17/2008 | | HCSB0410-SS-AA-AB-0 |
| HC | HCSB0412 | 0 | 0.5 | 4/21/2008 | | HCSB0412-SS-AA-AB-0 |
| HC | HCSB0413 | 0 | 0.5 | 4/21/2008 | | HCSB0413-SS-AA-AB-0 |
| HC | HCSB0414 | 0 | 0.5 | 4/21/2008 | | HCSB0414-SS-AA-AB-0 |
| HC | HCSB0415 | 0 | 0.5 | 4/21/2008 | | HCSB0415-SS-AA-AB-0 |
| HC | HCSB0416 | 0 | 0.5 | 4/21/2008 | | HCSB0416-SS-AA-AB-0 |
| HC | HCSB0417 | 0 | 0.5 | 4/21/2008 | | HCSB0417-SS-AA-AB-0 |
| HC | HCSB0418 | 0 | 0.5 | 4/22/2008 | | HCSB0418-SS-AA-AB-0 |
| HC | HCSB0419 | 0 | 0.5 | 4/22/2008 | | HCSB0419-SS-AA-AB-0 |
| HC | HCSB0420 | 0 | 0.5 | 4/22/2008 | | HCSB0420-SS-AA-AB-0 |
| HC | HCSB0421 | 0 | 0.5 | 4/22/2008 | | HCSB0421-SS-AA-AB-0 |
| HC | HCSB0422 | 0 | 0.5 | 4/22/2008 | | HCSB0422-SS-AA-AB-0 |
| HC | HCSB0423 | 0 | 0.5 | 4/22/2008 | | HCSB0423-SS-AA-AB-0 |
| HC | HCSB0424 | 0 | 0.5 | 4/22/2008 | | HCSB0424-SS-AA-AB-0 |
| HC | HCSB0425 | 0 | 0.5 | 4/23/2008 | | HCSB0425-SS-AA-AB-0 |
| HC | HCSB0426 | 0 | 0.5 | 4/23/2008 | | HCSB0426-SS-AA-AB-0 |
| HC | HCSB0428 | 0 | 0.5 | 4/29/2008 | | HCSB0428-SS-AA-AB-0 |
| HC | HCSB0435 | 0 | 0.5 | 4/30/2008 | | HCSB0435-SS-AA-AB-0 |
| HC | HCSB0446 | 0 | 0.5 | 5/6/2008 | | HCSB0446-SS-AA-AB-0 |
| HC | HCSB0458 | 0 | 0.5 | 5/14/2008 | | HCSB0458-SS-AA-AB-0 |
| HC | HCSB0465 | 0 | 0.5 | 5/19/2008 | | HCSB0465-SS-AA-AB-0 |
| HC | HCSB0466 | 0 | 0.5 | 5/19/2008 | | HCSB0466-SS-AA-AB-0 |
| HC | HCSB0466 | 0 | 0.5 | 5/19/2008 | FD | HCSB0466-SS-AA-AB-1 |
| HC | HCSB0472 | 0 | 0.5 | 5/19/2008 | | HCSB0472-SS-AA-AB-0 |
| HC | HCSB0477 | 0 | 0.5 | 5/21/2008 | | HCSB0477-SS-AA-AB-0 |
| HC | HCSB0480 | 0 | 0.5 | 5/21/2008 | | HCSB0480-SS-AA-AB-0 |
| HC | HCSB0482 | 0 | 0.5 | 6/17/2008 | | HCSB0482-SS-AA-AB-0 |
| HC | HCSB0483 | 0 | 0.5 | 6/17/2008 | | HCSB0483-SS-AA-AB-0 |
| HC | HCSB0484 | 0 | 0.5 | 6/17/2008 | | HCSB0484-SS-AA-AB-0 |
| HC | HCSB0485 | 0 | 0.5 | 6/17/2008 | | HCSB0485-SS-AA-AB-0 |
| HC | RSSB0023 | 0 | 0.5 | 7/2/2007 | | RSSB0023-SS-AA-AB-0 |
| HC | RSSB0023 | 1.5 | 2 | 7/2/2007 | | RSSB0023-SS-AD-AE-0 |
| HC | RSSB0024 | 0 | 0.5 | 7/2/2007 | | RSSB0024-SS-AA-AB-0 |
| HC | RSSB0024 | 1.5 | 2 | 7/2/2007 | | RSSB0024-SS-AD-AE-0 |
| HC | RSSB0025 | 0 | 0.5 | 7/2/2007 | | RSSB0025-SS-AA-AB-0 |
| HC | RSSB0025 | 1.5 | 2 | 7/2/2007 | | RSSB0025-SS-AD-AE-0 |
| HC | RSSB0026 | 0 | 0.5 | 7/2/2007 | | RSSB0026-SS-AA-AB-0 |
| HC | RSSB0026 | 1.5 | 2 | 7/2/2007 | | RSSB0026-SS-AD-AE-0 |
| HC | RSSB0027 | 0 | 0.5 | 7/2/2007 | | RSSB0027-SS-AA-AB-0 |
| HC | RSSB0027 | 1.5 | 2 | 7/2/2007 | | RSSB0027-SS-AD-AE-0 |
| HC | RSSB0028 | 0 | 0.5 | 7/2/2007 | | RSSB0028-SS-AA-AB-0 |
| HC | RSSB0028 | 1.5 | 2 | 7/2/2007 | | RSSB0028-SS-AD-AE-0 |
| HC | RSSB0029 | 0 | 0.5 | 7/2/2007 | | RSSB0029-SS-AA-AB-0 |
| HC | RSSB0029 | 1.5 | 2 | 7/2/2007 | | RSSB0029-SS-AD-AE-0 |
| HC | RSSB0030 | 0 | 0.5 | 7/2/2007 | | RSSB0030-SS-AA-AB-0 |
| HC | RSSB0030 | 1.5 | 2 | 7/2/2007 | | RSSB0030-SS-AD-AE-0 |
| HC | RSSB0077 | 0 | 0.5 | 7/16/2007 | | RSSB0077-SS-AA-AB-0 |
| HC | RSSB0077 | 1.5 | 2 | 7/16/2007 | | RSSB0077-SS-AD-AE-0 |

**Table 2 Soil Samples Included in HHRA**

| Exposure Area | Location ID | Upper Depth (ft) | Lower Depth (ft) | Sample Date | Field Duplicate | Sample ID |
|---|---|---|---|---|---|---|
| KWL | HCSB0199 | 0 | 2 | 7/27/2005 | | HCSB0199-SS-AA-AE-0 |
| KWL | HCSB0200 | 0 | 2 | 7/27/2005 | | HCSB0200-SS-AA-AE-0 |
| KWL | KWSB0001 | 0 | 0.5 | 11/5/2007 | | KWSB0001-SS-AA-AB-0 |
| KWL | KWSB0002 | 0 | 0.5 | 11/5/2007 | | KWSB0002-SS-AA-AB-0 |
| KWL | KWSB0003 | 0 | 0.5 | 11/5/2007 | | KWSB0003-SS-AA-AB-0 |
| KWL | KWSB0004 | 0 | 0.5 | 11/5/2007 | | KWSB0004-SS-AA-AB-0 |
| KWL | KWSB0005 | 0 | 0.5 | 11/5/2007 | | KWSB0005-SS-AA-AB-0 |
| KWL | KWSB0006 | 0 | 0.5 | 11/5/2007 | | KWSB0006-SS-AA-AB-0 |
| KWL | KWSB0007 | 0 | 0.5 | 11/5/2007 | | KWSB0007-SS-AA-AB-0 |
| KWL | KWSB0008 | 0 | 0.5 | 11/5/2007 | | KWSB0008-SS-AA-AB-0 |
| KWL | KWSB0009 | 0 | 0.5 | 11/5/2007 | | KWSB0009-SS-AA-AB-0 |
| KWL | KWSB0010 | 0 | 0.5 | 11/5/2007 | | KWSB0010-SS-AA-AB-0 |
| KWL | KWSB0010 | 0 | 0.5 | 11/5/2007 | FD | KWSB0010-SS-AA-AB-1 |
| KWL | KWSB0011 | 0 | 0.5 | 11/5/2007 | | KWSB0011-SS-AA-AB-0 |
| KWL | KWSB0012 | 0 | 0.5 | 11/6/2007 | | KWSB0012-SS-AA-AB-0 |
| KWL | KWSB0013 | 0 | 0.5 | 11/6/2007 | | KWSB0013-SS-AA-AB-0 |
| KWL | KWSB0014 | 0 | 0.5 | 11/6/2007 | | KWSB0014-SS-AA-AB-0 |
| KWL | KWSB0015 | 0 | 0.5 | 11/6/2007 | | KWSB0015-SS-AA-AB-0 |
| KWL | KWSB0024 | 0 | 0.5 | 11/13/2007 | | KWSB0024-SS-AA-AB-0 |
| KWL | KWSB0025 | 0 | 0.5 | 11/13/2007 | | KWSB0025-SS-AA-AB-0 |
| KWL | KWSB0026 | 0 | 0.5 | 11/13/2007 | | KWSB0026-SS-AA-AB-0 |
| KWL | KWSB0027 | 0 | 0.5 | 11/13/2007 | | KWSB0027-SS-AA-AB-0 |
| KWL | KWSB0028 | 0 | 0.5 | 11/13/2007 | | KWSB0028-SS-AA-AB-0 |
| KWL | KWSB0028 | 0 | 0.5 | 11/13/2007 | FD | KWSB0028-SS-AA-AB-1 |
| KWL | KWSB0029 | 0 | 0.5 | 11/13/2007 | | KWSB0029-SS-AA-AB-0 |
| KWL | KWSB0030 | 0 | 0.5 | 11/13/2007 | | KWSB0030-SS-AA-AB-0 |
| KWL | KWSB0031 | 0 | 0.5 | 11/13/2007 | | KWSB0031-SS-AA-AB-0 |
| KWL | KWSB0032 | 0 | 0.5 | 11/14/2007 | | KWSB0032-SS-AA-AB-0 |
| KWL | KWSB0033 | 0 | 0.5 | 11/14/2007 | | KWSB0033-SS-AA-AB-0 |
| KWL | KWSB0035 | 0 | 0.5 | 11/14/2007 | | KWSB0035-SS-AA-AB-0 |
| KWL | KWSB0036 | 0 | 0.5 | 11/14/2007 | | KWSB0036-SS-AA-AB-0 |
| KWL | KWSB0037 | 0 | 0.5 | 11/14/2007 | | KWSB0037-SS-AA-AB-0 |
| KWL | KWSB0038 | 0 | 0.5 | 11/14/2007 | | KWSB0038-SS-AA-AB-0 |
| KWL | KWSB0039 | 0 | 0.5 | 3/29/2011 | | KWSB0039-SS-AA-AB-0 |
| KWL | KWSB0040 | 0 | 0.5 | 3/29/2011 | | KWSB0040-SS-AA-AB-0 |
| KWL | KWSB0040 | 0 | 0.5 | 3/29/2011 | FD | KWSB0040-SS-AA-AB-1 |
| KWL | KWSB0041 | 0 | 0.5 | 3/29/2011 | | KWSB0041-SS-AA-AB-0 |
| KWL | KWSB0042 | 0 | 0.5 | 3/29/2011 | | KWSB0042-SS-AA-AB-0 |
| KWL | KWSB0043 | 0 | 0.5 | 3/29/2011 | | KWSB0043-SS-AA-AB-0 |

**Table 3 Sediment Sample Locations Included in HHRA**

| Exposure Area | Location ID |
|---|---|
| BWL | BWDD0001 |
| BWL | BWDD0002 |
| BWL | BWDD0003 |
| BWL | BWDD0004 |
| BWL | BWDD0005 |
| BWL | BWDD0006 |
| BWL | BWDD0007 |
| BWL | BWDD0008 |
| BWL | BWDD0009 |
| BWL | BWDD0010 |
| BWL | BWDD0011 |
| BWL | BWDD0012 |
| BWL | BWDD0013 |
| BWL | BWDD0014 |
| BWL | BWDD0015 |
| BWL | BWDD0016 |
| BWL | BWDD0017 |
| BWL | BWDD0018 |
| BWL | BWDD0019 |
| BWL | BWDD0020 |
| BWL | BWDD0021 |
| BWL | BWDD0022 |
| BWL | BWDD0023 |
| BWL | BWDD0024 |
| BWL | BWDD0025 |
| BWL | BWDD0026 |
| BWL | BWDD0027 |
| BWL | BWDD0028 |
| BWL | BWDD0029 |
| BWL | BWDD0030 |
| BWL | BWDD0031 |
| BWL | BWDD0032 |
| BWL | BWDD0033 |
| BWL | BWDD0034 |
| BWL | BWDD0035 |
| BWL | BWDD0036 |
| BWL | BWDD0037 |
| BWL | BWDD0038 |
| BWL | BWDD0039 |
| BWL | BWDD0040 |
| BWL | BWDD0041 |
| BWL | BWDD0042 |
| BWL | BWDD0043 |
| BWL | BWDD0044 |
| BWL | BWDD0045 |
| BWL | BWDD0046 |
| BWL | BWDD0047 |
| BWL | BWDD0048 |
| BWL | BWDD0049 |
| BWL | BWDD0050 |
| BWL | BWDD0051 |

**Table 3 Sediment Sample Locations Included in HHRA**

| Exposure Area | Location ID |
|---|---|
| BWL | BWDD0052 |
| BWL | BWDD0053 |
| BWL | BWDD0056 |
| BWL | BWDD0057 |
| BWL | BWDD0058 |
| BWL | BWDD0059 |
| BWL | BWDD0060 |
| HC | HCDD0001 |
| HC | HCDD0002 |
| HC | HCDD0003 |
| HC | HCDD0004 |
| HC | HCDD0005 |
| HC | HCDD0006 |
| HC | HCDD0007 |
| HC | HCDD0008 |
| HC | HCDD0009 |
| HC | HCDD0010 |
| HC | HCDD0011 |
| HC | HCDD0012 |
| HC | HCDD0013 |
| HC | HCDD0014 |
| HC | HCDD0015 |
| HC | HCDD0016 |
| HC | HCDD0017 |
| HC | HCDD0018 |
| HC | HCDD0019 |
| HC | HCDD0020 |
| HC | HCDD0021 |
| HC | HCDD0022 |
| HC | HCDD0023 |
| HC | HCDD0024 |
| HC | HCDD0025 |
| HC | HCDD0026 |
| HC | HCDD0027 |
| HC | HCDD0028 |
| HC | HCDD0029 |
| HC | HCDD0030 |
| HC | HCDD0031 |
| HC | HCDD0032 |
| HC | HCDD0033 |
| HC | HCDD0034 |
| HC | HCDD0040 |
| HC | HCDD0041 |
| HC | HCDD0042 |
| HC | HCDD0043 |
| HC | HCDD0052 |
| HC | HCDD0053 |
| HC | HCDD0054 |
| HC | HCDD0055 |
| HC | HCDD0056 |
| HC | HCDD0057 |

**Table 3 Sediment Sample Locations Included in HHRA**

| Exposure Area | Location ID |
|---|---|
| HC | HCDD0058 |
| HC | HCDD0059 |
| HC | HCDD0060 |
| HC | HCDD0061 |
| HC | HCDD0062 |
| HC | HCDD0063 |
| HC | HCDD0064 |
| HC | HCDD0065 |
| HC | HCDD0066 |
| HC | HCDD0067 |
| HC | HCDD0068 |
| HC | HCDD0069 |
| HC | HCDD0070 |
| HC | HCDD0071 |
| HC | HCDD0072 |
| HC | HCDD0074 |
| HC | HCDD0075 |
| HC | HCDD0076 |
| HC | HCDD0077 |
| HC | HCDD0078 |
| HC | HCDD0079 |
| HC | HCDD0080 |
| HC | HCDD0081 |
| HC | HCDD0082 |
| HC | HCDD0083 |
| HC | HCDD0084 |
| HC | HCDD0085 |
| HC | HCDD0086 |
| HC | HCDD0087 |
| HC | HCDD0088 |
| HC | HCDD0089 |
| HC | HCDD0090 |
| HC | HCDD0091 |
| HC | HCDD0092 |
| HC | HCDD0093 |
| HC | HCDD0094 |
| HC | HCDD0095 |
| HC | HCDD0096 |
| HC | HCDD0097 |
| HC | HCDD0098 |
| HC | HCDD0101 |
| HC | HCDD0102 |
| HC | HCDD0103 |
| HC | HCDD0104 |
| HC | HCDD0107 |
| HC | HCDD0108 |
| HC | HCDD0109 |
| HC | HCDD0110 |
| HC | HCDD0112 |
| HC | HCDD0113 |
| HC | HCDD0114 |

**Table 3 Sediment Sample Locations Included in HHRA**

| Exposure Area | Location ID |
|---|---|
| HC | HCDD0115 |
| HC | HCDD0116 |
| HC | HCDD0117 |
| HC | HCDD0118 |
| HC | HCDD0119 |
| HC | HCDD0120 |
| HC | HCDD0121 |
| HC | HCDD0122 |
| HC | HCDD0123 |
| HC | HCDD0124 |
| HC | HCDD0125 |
| HC | HCDD0126 |
| HC | HCDD0127 |
| HC | HCDD0128 |
| HC | HCDD0129 |
| HC | HCDD0130 |
| HC | HCDD0131 |
| HC | HCDD0132 |
| HC | HCDD0133 |
| HC | HCDD0134 |
| HC | HCDD0135 |
| HC | HCDD0136 |
| HC | HCDD0137 |
| HC | HCDD0138 |
| HC | HCDD0142 |
| HC | HCDD0143 |
| HC | HCDD0147 |
| KWL | HCDD0046 |
| KWL | HCDD0047 |
| KWL | HCDD0048 |
| KWL | HCDD0049 |
| KWL | HCDD0050 |
| KWL | HCDD0051 |
| KWL | KWDD0001 |
| KWL | KWDD0002 |
| KWL | KWDD0003 |
| KWL | KWDD0004 |
| KWL | KWDD0005 |
| KWL | KWDD0006 |
| KWL | KWDD0007 |
| KWL | KWDD0010 |
| KWL | KWDD0011 |
| KWL | KWDD0012 |
| KWL | KWDD0013 |
| KWL | KWDD0014 |
| KWL | KWDD0015 |
| KWL | KWDD0016 |
| KWL | KWDD0017 |
| KWL | KWDD0018 |
| KWL | KWDD0019 |
| KWL | KWDD0020 |

**Table 3 Sediment Sample Locations Included in HHRA**

| Exposure Area | Location ID |
|---|---|
| KWL | KWDD0021 |
| KWL | KWDD0022 |
| KWL | KWDD0023 |
| KWL | KWDD0024 |
| KWL | KWDD0025 |
| KWL | KWDD0026 |
| KWL | KWDD0027 |
| KWL | KWDD0028 |
| KWL | KWDD0029 |
| KWL | KWDD0030 |
| KWL | KWDD0031 |
| KWL | KWDD0032 |
| KWL | KWDD0033 |
| KWL | KWDD0034 |
| KWL | KWDD0035 |
| KWL | KWDD0036 |
| KWL | KWDD0037 |
| KWL | KWDD0038 |
| KWL | KWDD0039 |
| KWL | KWDD0040 |
| KWL | KWDD0041 |
| KWL | KWDD0042 |
| KWL | KWDD0043 |
| KWL | KWDD0044 |
| KWL | KWDD0045 |
| KWL | KWDD0046 |
| KWL | KWDD0047 |
| KWL | KWDD0048 |
| KWL | KWDD0049 |
| KWL | KWDD0050 |
| KWL | KWDD0051 |
| KWL | KWDD0052 |
| KWL | KWDD0053 |
| KWL | KWDD0054 |
| KWL | KWDD0055 |
| KWL | KWDD0056 |
| KWL | KWDD0057 |
| KWL | KWDD0058 |
| KWL | KWDD0059 |
| KWL | KWDD0060 |
| KWL | KWDD0061 |
| KWL | KWDD0062 |
| KWL | KWDD0063 |
| KWL | KWDD0064 |
| KWL | KWDD0065 |
| KWL | KWDD0066 |
| KWL | KWDD0067 |
| KWL | KWDD0068 |
| KWL | KWDD0069 |
| KWL | KWDD0070 |
| KWL | KWDD0071 |

**Table 3 Sediment Sample Locations Included in HHRA**

| Exposure Area | Location ID |
|---|---|
| KWL | KWDD0072 |
| KWL | KWDD0073 |
| KWL | KWDD0074 |
| KWL | KWDD0075 |
| KWL | KWDD0076 |
| KWL | KWDD0077 |
| KWL | KWDD0078 |
| KWL | KWDD0079 |
| KWL | KWDD0080 |
| KWL | KWDD0081 |
| KWL | KWDD0082 |
| KWL | KWDD0083 |
| KWL | KWDD0084 |
| KWL | KWDD0085 |
| KWL | KWDD0086 |
| KWL | KWDD0087 |
| KWL | KWDD0088 |
| KWL | KWDD0089 |
| KWL | KWDD0090 |
| KWL | KWDD0091 |
| KWL | KWDD0092 |
| KWL | KWDD0093 |
| KWL | KWDD0094 |
| KWL | KWDD0095 |
| KWL | KWDD0096 |
| KWL | KWDD0097 |
| KWL | KWDD0098 |
| KWL | KWDD0099 |
| KWL | KWDD0100 |
| KWL | KWDD0101 |
| KWL | KWDD0102 |
| KWL | KWDD0103 |
| KWL | KWDD0104 |
| KWL | KWDD0105 |
| KWL | KWDD0106 |
| KWL | KWDD0107 |
| KWL | KWDD0112 |
| SL | SLDD0001 |
| SL | SLDD0002 |
| SL | SLDD0003 |
| SL | SLDD0004 |
| SL | SLDD0005 |
| SL | SLDD0006 |
| SL | SLDD0007 |
| SL | SLDD0008 |
| SL | SLDD0009 |
| SL | SLDD0010 |
| SL | SLDD0011 |
| SL | SLDD0012 |
| SL | SLDD0013 |
| SL | SLDD0014 |

**Table 3 Sediment Sample Locations Included in HHRA**

| Exposure Area | Location ID |
|---|---|
| SL | SLDD0015 |
| SL | SLDD0016 |
| SL | SLDD0017 |
| SL | SLDD0018 |
| SL | SLDD0019 |
| SL | SLDD0020 |
| SL | SLDD0021 |
| SL | SLDD0022 |
| SL | SLDD0023 |
| SL | SLDD0024 |
| SL | SLDD0025 |
| SL | SLDD0026 |
| SL | SLDD0027 |
| SL | SLDD0028 |
| SL | SLDD0029 |
| SL | SLDD0030 |
| SL | SLDD0031 |
| SL | SLDD0032 |
| SL | SLDD0033 |

**Table 4 Sediment Samples Included in HHRA**

| Exposure Area | Location ID | Upper Depth (ft) | Lower Depth (ft) | Sample Date | Field Duplicate | Sample ID |
|---|---|---|---|---|---|---|
| BWL | BWDD0001 | 0 | 0.5 | 7/13/2005 | | BWDD0001-SD-AA-AB-0 |
| BWL | BWDD0001 | 0 | 0.5 | 5/10/2011 | | BWDD0001-SD-AA-AB-0_A |
| BWL | BWDD0002 | 0 | 0.5 | 7/13/2005 | | BWDD0002-SD-AA-AB-0 |
| BWL | BWDD0003 | 0 | 0.5 | 7/13/2005 | | BWDD0003-SD-AA-AB-0 |
| BWL | BWDD0003 | 0 | 0.5 | 5/10/2011 | | BWDD0003-SD-AA-AB-0_A |
| BWL | BWDD0004 | 0 | 0.5 | 7/13/2005 | | BWDD0004-SD-AA-AB-0 |
| BWL | BWDD0005 | 0 | 0.5 | 7/13/2005 | | BWDD0005-SD-AA-AB-0 |
| BWL | BWDD0006 | 0 | 0.5 | 7/13/2005 | | BWDD0006-SD-AA-AB-0 |
| BWL | BWDD0007 | 0 | 0.5 | 7/13/2005 | | BWDD0007-SD-AA-AB-0 |
| BWL | BWDD0008 | 0 | 0.5 | 7/13/2005 | | BWDD0008-SD-AA-AB-0 |
| BWL | BWDD0009 | 0 | 0.5 | 7/13/2005 | | BWDD0009-SD-AA-AB-0 |
| BWL | BWDD0010 | 0 | 0.5 | 7/14/2005 | | BWDD0010-SD-AA-AB-0 |
| BWL | BWDD0011 | 0 | 0.5 | 7/14/2005 | | BWDD0011-SD-AA-AB-0 |
| BWL | BWDD0012 | 0 | 0.5 | 7/14/2005 | | BWDD0012-SD-AA-AB-0 |
| BWL | BWDD0013 | 0 | 0.5 | 7/14/2005 | | BWDD0013-SD-AA-AB-0 |
| BWL | BWDD0014 | 0 | 0.5 | 7/14/2005 | | BWDD0014-SD-AA-AB-0 |
| BWL | BWDD0015 | 0 | 0.5 | 7/14/2005 | | BWDD0015-SD-AA-AB-0 |
| BWL | BWDD0015 | 0 | 0.5 | 7/14/2005 | FD | BWDD0015-SD-AA-AB-1 |
| BWL | BWDD0016 | 0 | 0.5 | 7/14/2005 | | BWDD0016-SD-AA-AB-0 |
| BWL | BWDD0017 | 0 | 0.5 | 7/14/2005 | | BWDD0017-SD-AA-AB-0 |
| BWL | BWDD0018 | 0 | 0.5 | 7/14/2005 | | BWDD0018-SD-AA-AB-0 |
| BWL | BWDD0019 | 0 | 0.5 | 7/18/2005 | | BWDD0019-SD-AA-AB-0 |
| BWL | BWDD0020 | 0 | 0.5 | 7/18/2005 | | BWDD0020-SD-AA-AB-0 |
| BWL | BWDD0021 | 0 | 0.5 | 7/18/2005 | | BWDD0021-SD-AA-AB-0 |
| BWL | BWDD0022 | 0 | 0.5 | 7/18/2005 | | BWDD0022-SD-AA-AB-0 |
| BWL | BWDD0023 | 0 | 0.5 | 7/18/2005 | | BWDD0023-SD-AA-AB-0 |
| BWL | BWDD0024 | 0 | 0.5 | 7/18/2005 | | BWDD0024-SD-AA-AB-0 |
| BWL | BWDD0025 | 0 | 0.5 | 7/18/2005 | | BWDD0025-SD-AA-AB-0 |
| BWL | BWDD0026 | 0 | 0.5 | 7/18/2005 | | BWDD0026-SD-AA-AB-0 |
| BWL | BWDD0027 | 0 | 0.5 | 7/18/2005 | | BWDD0027-SD-AA-AB-0 |
| BWL | BWDD0028 | 0 | 0.5 | 7/18/2005 | | BWDD0028-SD-AA-AB-0 |
| BWL | BWDD0029 | 0 | 0.5 | 7/18/2005 | | BWDD0029-SD-AA-AB-0 |
| BWL | BWDD0030 | 0 | 0.5 | 7/19/2005 | | BWDD0030-SD-AA-AB-0 |
| BWL | BWDD0031 | 0 | 0.5 | 7/19/2005 | | BWDD0031-SD-AA-AB-0 |
| BWL | BWDD0032 | 0 | 0.5 | 7/19/2005 | | BWDD0032-SD-AA-AB-0 |
| BWL | BWDD0033 | 0 | 0.5 | 7/19/2005 | | BWDD0033-SD-AA-AB-0 |
| BWL | BWDD0033 | 0 | 0.5 | 7/19/2005 | FD | BWDD0033-SD-AA-AB-1 |
| BWL | BWDD0034 | 0 | 0.5 | 7/19/2005 | | BWDD0034-SD-AA-AB-0 |
| BWL | BWDD0035 | 0 | 0.5 | 7/19/2005 | | BWDD0035-SD-AA-AB-0 |
| BWL | BWDD0036 | 0 | 0.5 | 7/19/2005 | | BWDD0036-SD-AA-AB-0 |
| BWL | BWDD0037 | 0 | 0.5 | 7/20/2005 | | BWDD0037-SD-AA-AB-0 |
| BWL | BWDD0037 | 0 | 0.5 | 12/18/2007 | | BWDD0037-SD-AA-AB-0 |
| BWL | BWDD0038 | 0 | 0.5 | 7/20/2005 | | BWDD0038-SD-AA-AB-0 |
| BWL | BWDD0039 | 0 | 0.5 | 7/20/2005 | | BWDD0039-SD-AA-AB-0 |
| BWL | BWDD0040 | 0 | 0.5 | 7/20/2005 | | BWDD0040-SD-AA-AB-0 |
| BWL | BWDD0040 | 0 | 0.5 | 12/18/2007 | | BWDD0040-SD-AA-AB-0 |
| BWL | BWDD0041 | 0 | 0.5 | 7/20/2005 | | BWDD0041-SD-AA-AB-0 |
| BWL | BWDD0042 | 0 | 0.5 | 7/20/2005 | | BWDD0042-SD-AA-AB-0 |
| BWL | BWDD0043 | 0 | 0.5 | 7/20/2005 | | BWDD0043-SD-AA-AB-0 |
| BWL | BWDD0044 | 0 | 0.5 | 7/26/2005 | | BWDD0044-SD-AA-AB-0 |
| BWL | BWDD0044 | 0 | 0.5 | 7/26/2005 | FD | BWDD0044-SD-AA-AB-1 |
| BWL | BWDD0045 | 0 | 0.5 | 7/26/2005 | | BWDD0045-SD-AA-AB-0 |
| BWL | BWDD0046 | 0 | 0.5 | 7/27/2005 | | BWDD0046-SD-AA-AB-0 |
| BWL | BWDD0047 | 0 | 0.5 | 7/27/2005 | | BWDD0047-SD-AA-AB-0 |
| BWL | BWDD0048 | 0 | 0.5 | 7/27/2005 | | BWDD0048-SD-AA-AB-0 |
| BWL | BWDD0049 | 0 | 0.5 | 7/27/2005 | | BWDD0049-SD-AA-AB-0 |
| BWL | BWDD0050 | 0 | 0.5 | 8/15/2005 | | BWDD0050-SD-AA-AB-0 |

**Table 4 Sediment Samples Included in HHRA**

| Exposure Area | Location ID | Upper Depth (ft) | Lower Depth (ft) | Sample Date | Field Duplicate | Sample ID |
|---|---|---|---|---|---|---|
| BWL | BWDD0051 | 0 | 0.5 | 8/15/2005 | | BWDD0051-SD-AA-AB-0 |
| BWL | BWDD0052 | 0 | 0.5 | 8/15/2005 | | BWDD0052-SD-AA-AB-0 |
| BWL | BWDD0053 | 0 | 0.5 | 8/15/2005 | | BWDD0053-SD-AA-AB-0 |
| BWL | BWDD0053 | 0 | 0.5 | 12/18/2007 | | BWDD0053-SD-AA-AB-0 |
| BWL | BWDD0053 | 0 | 0.5 | 8/15/2005 | FD | BWDD0053-SD-AA-AB-1 |
| BWL | BWDD0056 | 0 | 0.5 | 9/20/2005 | | BWDD0056-SD-AA-AB-0 |
| BWL | BWDD0057 | 0 | 0.5 | 9/21/2005 | | BWDD0057-SD-AA-AB-0 |
| BWL | BWDD0058 | 0 | 0.5 | 9/21/2005 | | BWDD0058-SD-AA-AB-0 |
| BWL | BWDD0059 | 0 | 0.5 | 9/21/2005 | | BWDD0059-SD-AA-AB-0 |
| BWL | BWDD0060 | 0 | 0.5 | 9/21/2005 | | BWDD0060-SD-AA-AB-0 |
| HC | HCDD0001 | 0 | 0.5 | 6/1/2005 | | HCDD0001-SD-AA-AB-0 |
| HC | HCDD0002 | 0 | 0.5 | 6/1/2005 | | HCDD0002-SD-AA-AB-0 |
| HC | HCDD0003 | 0 | 0.5 | 6/2/2005 | | HCDD0003-SD-AA-AB-0 |
| HC | HCDD0004 | 0 | 0.5 | 6/2/2005 | | HCDD0004-SD-AA-AB-0 |
| HC | HCDD0005 | 0 | 0.5 | 6/2/2005 | | HCDD0005-SD-AA-AB-0 |
| HC | HCDD0005 | 0 | 0.5 | 6/2/2005 | FD | HCDD0005-SD-AA-AB-1 |
| HC | HCDD0006 | 0 | 0.5 | 6/3/2005 | | HCDD0006-SD-AA-AB-0 |
| HC | HCDD0007 | 0 | 0.5 | 6/3/2005 | | HCDD0007-SD-AA-AB-0 |
| HC | HCDD0008 | 0 | 0.5 | 6/3/2005 | | HCDD0008-SD-AA-AB-0 |
| HC | HCDD0009 | 0 | 0.5 | 6/6/2005 | | HCDD0009-SD-AA-AB-0 |
| HC | HCDD0010 | 0 | 0.5 | 6/6/2005 | | HCDD0010-SD-AA-AB-0 |
| HC | HCDD0011 | 0 | 0.5 | 6/6/2005 | | HCDD0011-SD-AA-AB-0 |
| HC | HCDD0012 | 0 | 0.5 | 6/6/2005 | | HCDD0012-SD-AA-AB-0 |
| HC | HCDD0013 | 0 | 0.5 | 6/7/2005 | | HCDD0013-SD-AA-AB-0 |
| HC | HCDD0014 | 0 | 0.5 | 6/7/2005 | | HCDD0014-SD-AA-AB-0 |
| HC | HCDD0014 | 0 | 0.5 | 6/7/2005 | FD | HCDD0014-SD-AA-AB-1 |
| HC | HCDD0015 | 0 | 0.5 | 6/7/2005 | | HCDD0015-SD-AA-AB-0 |
| HC | HCDD0016 | 0 | 0.5 | 6/7/2005 | | HCDD0016-SD-AA-AB-0 |
| HC | HCDD0017 | 0 | 0.5 | 6/8/2005 | | HCDD0017-SD-AA-AB-0 |
| HC | HCDD0018 | 0 | 0.5 | 6/8/2005 | | HCDD0018-SD-AA-AB-0 |
| HC | HCDD0019 | 0 | 0.5 | 6/8/2005 | | HCDD0019-SD-AA-AB-0 |
| HC | HCDD0020 | 0 | 0.5 | 6/9/2005 | | HCDD0020-SD-AA-AB-0 |
| HC | HCDD0021 | 0 | 0.5 | 6/9/2005 | | HCDD0021-SD-AA-AB-0 |
| HC | HCDD0022 | 0 | 0.5 | 6/9/2005 | | HCDD0022-SD-AA-AB-0 |
| HC | HCDD0023 | 0 | 0.5 | 6/9/2005 | | HCDD0023-SD-AA-AB-0 |
| HC | HCDD0024 | 0 | 0.5 | 6/13/2005 | | HCDD0024-SD-AA-AB-0 |
| HC | HCDD0025 | 0 | 0.5 | 6/13/2005 | | HCDD0025-SD-AA-AB-0 |
| HC | HCDD0026 | 0 | 0.5 | 6/13/2005 | | HCDD0026-SD-AA-AB-0 |
| HC | HCDD0026 | 0 | 0.5 | 6/13/2005 | FD | HCDD0026-SD-AA-AB-1 |
| HC | HCDD0027 | 0 | 0.5 | 6/14/2005 | | HCDD0027-SD-AA-AB-0 |
| HC | HCDD0028 | 0 | 0.5 | 6/14/2005 | | HCDD0028-SD-AA-AB-0 |
| HC | HCDD0029 | 0 | 0.5 | 6/14/2005 | | HCDD0029-SD-AA-AB-0 |
| HC | HCDD0030 | 0 | 0.5 | 6/15/2005 | | HCDD0030-SD-AA-AB-0 |
| HC | HCDD0031 | 0 | 0.5 | 6/15/2005 | | HCDD0031-SD-AA-AB-0 |
| HC | HCDD0032 | 0 | 0.5 | 6/15/2005 | | HCDD0032-SD-AA-AB-0 |
| HC | HCDD0033 | 0 | 0.5 | 6/16/2005 | | HCDD0033-SD-AA-AB-0 |
| HC | HCDD0033 | 0 | 0.5 | 6/16/2005 | FD | HCDD0033-SD-AA-AB-1 |
| HC | HCDD0034 | 0 | 0.5 | 6/16/2005 | | HCDD0034-SD-AA-AB-0 |
| HC | HCDD0040 | 0 | 0.5 | 7/7/2005 | | HCDD0040-SD-AA-AB-0 |
| HC | HCDD0041 | 0 | 0.5 | 7/7/2005 | | HCDD0041-SD-AA-AB-0 |
| HC | HCDD0042 | 0 | 0.5 | 7/7/2005 | | HCDD0042-SD-AA-AB-0 |
| HC | HCDD0043 | 0 | 0.5 | 7/7/2005 | | HCDD0043-SD-AA-AB-0 |
| HC | HCDD0052 | 0 | 0.5 | 8/3/2005 | | HCDD0052-SD-AA-AB-0 |
| HC | HCDD0052 | 0 | 0.5 | 8/3/2005 | FD | HCDD0052-SD-AA-AB-1 |
| HC | HCDD0053 | 0 | 0.5 | 8/3/2005 | | HCDD0053-SD-AA-AB-0 |
| HC | HCDD0054 | 0 | 0.5 | 8/3/2005 | | HCDD0054-SD-AA-AB-0 |
| HC | HCDD0055 | 0 | 0.5 | 8/3/2005 | | HCDD0055-SD-AA-AB-0 |

**Table 4 Sediment Samples Included in HHRA**

| Exposure Area | Location ID | Upper Depth (ft) | Lower Depth (ft) | Sample Date | Field Duplicate | Sample ID |
|---|---|---|---|---|---|---|
| HC | HCDD0056 | 0 | 0.5 | 8/3/2005 | | HCDD0056-SD-AA-AB-0 |
| HC | HCDD0057 | 0 | 0.5 | 8/3/2005 | | HCDD0057-SD-AA-AB-0 |
| HC | HCDD0058 | 0 | 0.5 | 8/4/2005 | | HCDD0058-SD-AA-AB-0 |
| HC | HCDD0059 | 0 | 0.5 | 8/4/2005 | | HCDD0059-SD-AA-AB-0 |
| HC | HCDD0060 | 0 | 0.5 | 8/8/2005 | | HCDD0060-SD-AA-AB-0 |
| HC | HCDD0061 | 0 | 0.5 | 8/9/2005 | | HCDD0061-SD-AA-AB-0 |
| HC | HCDD0062 | 0 | 0.5 | 8/9/2005 | | HCDD0062-SD-AA-AB-0 |
| HC | HCDD0063 | 0 | 0.5 | 8/9/2005 | | HCDD0063-SD-AA-AB-0 |
| HC | HCDD0063 | 0 | 0.5 | 8/9/2005 | FD | HCDD0063-SD-AA-AB-1 |
| HC | HCDD0064 | 0 | 0.5 | 8/9/2005 | | HCDD0064-SD-AA-AB-0 |
| HC | HCDD0065 | 0 | 0.5 | 8/10/2005 | | HCDD0065-SD-AA-AB-0 |
| HC | HCDD0066 | 0 | 0.5 | 8/10/2005 | | HCDD0066-SD-AA-AB-0 |
| HC | HCDD0067 | 0 | 0.5 | 8/10/2005 | | HCDD0067-SD-AA-AB-0 |
| HC | HCDD0068 | 0 | 0.5 | 8/10/2005 | | HCDD0068-SD-AA-AB-0 |
| HC | HCDD0069 | 0 | 0.5 | 8/10/2005 | | HCDD0069-SD-AA-AB-0 |
| HC | HCDD0070 | 0 | 0.5 | 8/11/2005 | | HCDD0070-SD-AA-AB-0 |
| HC | HCDD0070 | 0 | 0.5 | 8/11/2005 | FD | HCDD0070-SD-AA-AB-1 |
| HC | HCDD0071 | 0 | 0.5 | 8/11/2005 | | HCDD0071-SD-AA-AB-0 |
| HC | HCDD0072 | 0 | 0.5 | 8/11/2005 | | HCDD0072-SD-AA-AB-0 |
| HC | HCDD0074 | 0 | 0.5 | 9/21/2005 | | HCDD0074-SD-AA-AB-0 |
| HC | HCDD0075 | 0 | 0.5 | 9/21/2005 | | HCDD0075-SD-AA-AB-0 |
| HC | HCDD0076 | 0 | 0.5 | 9/21/2005 | | HCDD0076-SD-AA-AB-0 |
| HC | HCDD0077 | 0 | 0.5 | 6/28/2006 | | HCDD0077-SD-AA-AB-0 |
| HC | HCDD0078 | 0 | 0.5 | 6/29/2006 | | HCDD0078-SD-AA-AB-0 |
| HC | HCDD0078 | 0 | 0.5 | 6/29/2006 | FD | HCDD0078-SD-AA-AB-1 |
| HC | HCDD0079 | 0 | 0.5 | 7/6/2006 | | HCDD0079-SD-AA-AB-0 |
| HC | HCDD0080 | 0 | 0.5 | 7/6/2006 | | HCDD0080-SD-AA-AB-0 |
| HC | HCDD0081 | 0 | 0.5 | 7/7/2006 | | HCDD0081-SD-AA-AB-0 |
| HC | HCDD0082 | 0 | 0.5 | 7/7/2006 | | HCDD0082-SD-AA-AB-0 |
| HC | HCDD0083 | 0 | 0.5 | 7/10/2006 | | HCDD0083-SD-AA-AB-0 |
| HC | HCDD0084 | 0 | 0.5 | 7/10/2006 | | HCDD0084-SD-AA-AB-0 |
| HC | HCDD0084 | 0 | 0.5 | 7/10/2006 | FD | HCDD0084-SD-AA-AB-1 |
| HC | HCDD0085 | 0 | 0.5 | 7/11/2006 | | HCDD0085-SD-AA-AB-0 |
| HC | HCDD0086 | 0 | 0.5 | 7/12/2006 | | HCDD0086-SD-AA-AB-0 |
| HC | HCDD0087 | 0 | 0.5 | 7/12/2006 | | HCDD0087-SD-AA-AB-0 |
| HC | HCDD0088 | 0 | 0.5 | 7/18/2006 | | HCDD0088-SD-AA-AB-0 |
| HC | HCDD0089 | 0 | 0.5 | 7/18/2006 | | HCDD0089-SD-AA-AB-0 |
| HC | HCDD0090 | 0 | 0.5 | 7/19/2006 | | HCDD0090-SD-AA-AB-0 |
| HC | HCDD0091 | 0 | 0.5 | 7/20/2006 | | HCDD0091-SD-AA-AB-0 |
| HC | HCDD0091 | 0 | 0.5 | 7/20/2006 | FD | HCDD0091-SD-AA-AB-1 |
| HC | HCDD0092 | 0 | 0.5 | 7/31/2006 | | HCDD0092-SD-AA-AB-0 |
| HC | HCDD0092 | 0 | 0.5 | 7/31/2006 | FD | HCDD0092-SD-AA-AB-1 |
| HC | HCDD0093 | 0 | 0.5 | 7/31/2006 | | HCDD0093-SD-AA-AB-0 |
| HC | HCDD0094 | 0 | 0.5 | 8/2/2006 | | HCDD0094-SD-AA-AB-0 |
| HC | HCDD0095 | 0 | 0.5 | 8/2/2006 | | HCDD0095-SD-AA-AB-0 |
| HC | HCDD0096 | 0 | 0.5 | 8/3/2006 | | HCDD0096-SD-AA-AB-0 |
| HC | HCDD0097 | 0 | 0.5 | 8/7/2006 | | HCDD0097-SD-AA-AB-0 |
| HC | HCDD0098 | 0 | 0.5 | 8/7/2006 | | HCDD0098-SD-AA-AB-0 |
| HC | HCDD0101 | 0 | 0.5 | 8/16/2006 | | HCDD0101-SD-AA-AB-0 |
| HC | HCDD0102 | 0 | 0.5 | 8/16/2006 | | HCDD0102-SD-AA-AB-0 |
| HC | HCDD0103 | 0 | 0.5 | 8/16/2006 | | HCDD0103-SD-AA-AB-0 |
| HC | HCDD0104 | 0 | 0.5 | 8/16/2006 | | HCDD0104-SD-AA-AB-0 |
| HC | HCDD0107 | 0 | 0.5 | 8/23/2006 | | HCDD0107-SD-AA-AB-0 |
| HC | HCDD0108 | 0 | 0.5 | 8/23/2006 | | HCDD0108-SD-AA-AB-0 |
| HC | HCDD0109 | 0 | 0.5 | 8/29/2006 | | HCDD0109-SD-AA-AB-0 |
| HC | HCDD0110 | 0 | 0.5 | 8/29/2006 | | HCDD0110-SD-AA-AB-0 |
| HC | HCDD0110 | 0 | 0.5 | 8/29/2006 | FD | HCDD0110-SD-AA-AB-1 |

**Table 4 Sediment Samples Included in HHRA**

| Exposure Area | Location ID | Upper Depth (ft) | Lower Depth (ft) | Sample Date | Field Duplicate | Sample ID |
|---|---|---|---|---|---|---|
| HC | HCDD0112 | 0 | 0.5 | 8/29/2006 | | HCDD0112-SD-AA-AB-0 |
| HC | HCDD0113 | 0 | 0.5 | 8/29/2006 | | HCDD0113-SD-AA-AB-0 |
| HC | HCDD0114 | 0 | 0.5 | 8/30/2006 | | HCDD0114-SD-AA-AB-0 |
| HC | HCDD0115 | 0 | 0.5 | 8/30/2006 | | HCDD0115-SD-AA-AB-0 |
| HC | HCDD0116 | 0 | 0.5 | 8/31/2006 | | HCDD0116-SD-AA-AB-0 |
| HC | HCDD0116 | 0 | 0.5 | 8/31/2006 | FD | HCDD0116-SD-AA-AB-1 |
| HC | HCDD0117 | 0 | 0.5 | 8/31/2006 | | HCDD0117-SD-AA-AB-0 |
| HC | HCDD0118 | 0 | 0.5 | 8/31/2006 | | HCDD0118-SD-AA-AB-0 |
| HC | HCDD0119 | 0 | 0.5 | 8/31/2006 | | HCDD0119-SD-AA-AB-0 |
| HC | HCDD0120 | 0 | 0.5 | 8/31/2006 | | HCDD0120-SD-AA-AB-0 |
| HC | HCDD0121 | 0 | 0.5 | 8/31/2006 | | HCDD0121-SD-AA-AB-0 |
| HC | HCDD0122 | 0 | 0.5 | 9/6/2006 | | HCDD0122-SD-AA-AB-0 |
| HC | HCDD0123 | 0 | 0.5 | 9/6/2006 | | HCDD0123-SD-AA-AB-0 |
| HC | HCDD0124 | 0 | 0.5 | 9/6/2006 | | HCDD0124-SD-AA-AB-0 |
| HC | HCDD0125 | 0 | 0.5 | 9/6/2006 | | HCDD0125-SD-AA-AB-0 |
| HC | HCDD0126 | 0 | 0.5 | 9/6/2006 | | HCDD0126-SD-AA-AB-0 |
| HC | HCDD0127 | 0 | 0.5 | 9/6/2006 | | HCDD0127-SD-AA-AB-0 |
| HC | HCDD0127 | 0 | 0.5 | 9/6/2006 | FD | HCDD0127-SD-AA-AB-1 |
| HC | HCDD0128 | 0 | 0.5 | 9/6/2006 | | HCDD0128-SD-AA-AB-0 |
| HC | HCDD0129 | 0 | 0.5 | 9/7/2006 | | HCDD0129-SD-AA-AB-0 |
| HC | HCDD0130 | 0 | 0.5 | 9/7/2006 | | HCDD0130-SD-AA-AB-0 |
| HC | HCDD0130 | 0 | 0.5 | 9/7/2006 | FD | HCDD0130-SD-AA-AB-1 |
| HC | HCDD0131 | 0 | 0.5 | 9/7/2006 | | HCDD0131-SD-AA-AB-0 |
| HC | HCDD0132 | 0 | 0.5 | 9/7/2006 | | HCDD0132-SD-AA-AB-0 |
| HC | HCDD0133 | 0 | 0.5 | 9/7/2006 | | HCDD0133-SD-AA-AB-0 |
| HC | HCDD0134 | 0 | 0.5 | 9/7/2006 | | HCDD0134-SD-AA-AB-0 |
| HC | HCDD0135 | 0 | 0.5 | 9/7/2006 | | HCDD0135-SD-AA-AB-0 |
| HC | HCDD0136 | 0 | 0.5 | 9/7/2006 | | HCDD0136-SD-AA-AB-0 |
| HC | HCDD0137 | 0 | 0.5 | 9/8/2006 | | HCDD0137-SD-AA-AB-0 |
| HC | HCDD0138 | 0 | 0.5 | 9/18/2006 | | HCDD0138-SD-AA-AB-0 |
| HC | HCDD0138 | 0 | 0.5 | 9/18/2006 | FD | HCDD0138-SD-AA-AB-1 |
| HC | HCDD0142 | 0 | 0.5 | 9/19/2006 | | HCDD0142-SD-AA-AB-0 |
| HC | HCDD0143 | 0 | 0.5 | 9/19/2006 | | HCDD0143-SD-AA-AB-0 |
| HC | HCDD0147 | 0 | 0.5 | 11/7/2007 | | HCDD0147-SD-AA-AB-0 |
| KWL | HCDD0046 | 0 | 0.5 | 7/28/2005 | | HCDD0046-SD-AA-AB-0 |
| KWL | HCDD0047 | 0 | 0.5 | 7/28/2005 | | HCDD0047-SD-AA-AB-0 |
| KWL | HCDD0048 | 0 | 0.5 | 8/1/2005 | | HCDD0048-SD-AA-AB-0 |
| KWL | HCDD0049 | 0 | 0.5 | 8/1/2005 | | HCDD0049-SD-AA-AB-0 |
| KWL | HCDD0050 | 0 | 0.5 | 8/1/2005 | | HCDD0050-SD-AA-AB-0 |
| KWL | HCDD0051 | 0 | 0.5 | 8/1/2005 | | HCDD0051-SD-AA-AB-0 |
| KWL | KWDD0001 | 0 | 0.5 | 10/3/2007 | | KWDD0001-SD-AA-AB-0 |
| KWL | KWDD0001 | 0 | 0.5 | 3/15/2011 | | KWDD0001-SD-AA-AB-0-A |
| KWL | KWDD0002 | 0 | 0.5 | 10/3/2007 | | KWDD0002-SD-AA-AB-0 |
| KWL | KWDD0003 | 0 | 0.5 | 10/3/2007 | | KWDD0003-SD-AA-AB-0 |
| KWL | KWDD0004 | 0 | 0.5 | 10/3/2007 | | KWDD0004-SD-AA-AB-0 |
| KWL | KWDD0004 | 0 | 0.5 | 10/3/2007 | FD | KWDD0004-SD-AA-AB-1 |
| KWL | KWDD0005 | 0 | 0.5 | 10/3/2007 | | KWDD0005-SD-AA-AB-0 |
| KWL | KWDD0005 | 0 | 0.5 | 6/26/2008 | | KWDD0005-SD-AA-AB-0_A |
| KWL | KWDD0006 | 0 | 0.5 | 10/3/2007 | | KWDD0006-SD-AA-AB-0 |
| KWL | KWDD0006 | 0 | 0.5 | 3/15/2011 | | KWDD0006-SD-AA-AB-0-A |
| KWL | KWDD0007 | 0 | 0.5 | 10/3/2007 | | KWDD0007-SD-AA-AB-0 |
| KWL | KWDD0010 | 0 | 0.5 | 10/4/2007 | | KWDD0010-SD-AA-AB-0 |
| KWL | KWDD0011 | 0 | 0.5 | 10/4/2007 | | KWDD0011-SD-AA-AB-0 |
| KWL | KWDD0011 | 0 | 0.5 | 3/15/2011 | | KWDD0011-SD-AA-AB-0-A |
| KWL | KWDD0012 | 0 | 0.5 | 10/4/2007 | | KWDD0012-SD-AA-AB-0 |
| KWL | KWDD0013 | 0 | 0.5 | 10/4/2007 | | KWDD0013-SD-AA-AB-0 |
| KWL | KWDD0014 | 0 | 0.5 | 10/4/2007 | | KWDD0014-SD-AA-AB-0 |

**Table 4 Sediment Samples Included in HHRA**

| Exposure Area | Location ID | Upper Depth (ft) | Lower Depth (ft) | Sample Date | Field Duplicate | Sample ID |
|---|---|---|---|---|---|---|
| KWL | KWDD0015 | 0 | 0.5 | 10/8/2007 | | KWDD0015-SD-AA-AB-0 |
| KWL | KWDD0015 | 0 | 0.5 | 3/15/2011 | | KWDD0015-SD-AA-AB-0-A |
| KWL | KWDD0016 | 0 | 0.5 | 10/8/2007 | | KWDD0016-SD-AA-AB-0 |
| KWL | KWDD0017 | 0 | 0.5 | 10/8/2007 | | KWDD0017-SD-AA-AB-0 |
| KWL | KWDD0018 | 0 | 0.5 | 10/8/2007 | | KWDD0018-SD-AA-AB-0 |
| KWL | KWDD0018 | 0 | 0.5 | 6/23/2008 | | KWDD0018-SD-AA-AB-0_A |
| KWL | KWDD0018 | 0 | 0.5 | 10/8/2007 | FD | KWDD0018-SD-AA-AB-1 |
| KWL | KWDD0019 | 0 | 0.5 | 10/8/2007 | | KWDD0019-SD-AA-AB-0 |
| KWL | KWDD0020 | 0 | 0.5 | 10/8/2007 | | KWDD0020-SD-AA-AB-0 |
| KWL | KWDD0021 | 0 | 0.5 | 10/8/2007 | | KWDD0021-SD-AA-AB-0 |
| KWL | KWDD0021 | 0 | 0.5 | 3/15/2011 | | KWDD0021-SD-AA-AB-0-A |
| KWL | KWDD0022 | 0 | 0.5 | 10/8/2007 | | KWDD0022-SD-AA-AB-0 |
| KWL | KWDD0023 | 0 | 0.5 | 10/8/2007 | | KWDD0023-SD-AA-AB-0 |
| KWL | KWDD0024 | 0 | 0.5 | 10/8/2007 | | KWDD0024-SD-AA-AB-0 |
| KWL | KWDD0025 | 0 | 0.5 | 10/9/2007 | | KWDD0025-SD-AA-AB-0 |
| KWL | KWDD0025 | 0 | 0.5 | 6/23/2008 | | KWDD0025-SD-AA-AB-0_A |
| KWL | KWDD0026 | 0 | 0.5 | 10/9/2007 | | KWDD0026-SD-AA-AB-0 |
| KWL | KWDD0027 | 0 | 0.5 | 10/9/2007 | | KWDD0027-SD-AA-AB-0 |
| KWL | KWDD0027 | 0 | 0.5 | 3/15/2011 | | KWDD0027-SD-AA-AB-0-A |
| KWL | KWDD0028 | 0 | 0.5 | 10/9/2007 | | KWDD0028-SD-AA-AB-0 |
| KWL | KWDD0029 | 0 | 0.5 | 10/9/2007 | | KWDD0029-SD-AA-AB-0 |
| KWL | KWDD0030 | 0 | 0.5 | 10/9/2007 | | KWDD0030-SD-AA-AB-0 |
| KWL | KWDD0031 | 0 | 0.5 | 10/9/2007 | | KWDD0031-SD-AA-AB-0 |
| KWL | KWDD0032 | 0 | 0.5 | 10/9/2007 | | KWDD0032-SD-AA-AB-0 |
| KWL | KWDD0033 | 0 | 0.5 | 10/9/2007 | | KWDD0033-SD-AA-AB-0 |
| KWL | KWDD0033 | 0 | 0.5 | 10/9/2007 | FD | KWDD0033-SD-AA-AB-1 |
| KWL | KWDD0034 | 0 | 0.5 | 10/9/2007 | | KWDD0034-SD-AA-AB-0 |
| KWL | KWDD0034 | 0 | 0.5 | 3/15/2011 | | KWDD0034-SD-AA-AB-0-A |
| KWL | KWDD0035 | 0 | 0.5 | 10/9/2007 | | KWDD0035-SD-AA-AB-0 |
| KWL | KWDD0036 | 0 | 0.5 | 10/9/2007 | | KWDD0036-SD-AA-AB-0 |
| KWL | KWDD0036 | 0 | 0.5 | 6/23/2008 | | KWDD0036-SD-AA-AB-0_A |
| KWL | KWDD0037 | 0 | 0.5 | 10/10/2007 | | KWDD0037-SD-AA-AB-0 |
| KWL | KWDD0038 | 0 | 0.5 | 10/10/2007 | | KWDD0038-SD-AA-AB-0 |
| KWL | KWDD0039 | 0 | 0.5 | 10/10/2007 | | KWDD0039-SD-AA-AB-0 |
| KWL | KWDD0040 | 0 | 0.5 | 10/10/2007 | | KWDD0040-SD-AA-AB-0 |
| KWL | KWDD0040 | 0 | 0.5 | 3/15/2011 | | KWDD0040-SD-AA-AB-0-A |
| KWL | KWDD0040 | 0 | 0.5 | 10/10/2007 | FD | KWDD0040-SD-AA-AB-1 |
| KWL | KWDD0041 | 0 | 0.5 | 10/10/2007 | | KWDD0041-SD-AA-AB-0 |
| KWL | KWDD0042 | 0 | 0.5 | 10/10/2007 | | KWDD0042-SD-AA-AB-0 |
| KWL | KWDD0043 | 0 | 0.5 | 10/11/2007 | | KWDD0043-SD-AA-AB-0 |
| KWL | KWDD0044 | 0 | 0.5 | 10/11/2007 | | KWDD0044-SD-AA-AB-0 |
| KWL | KWDD0044 | 0 | 0.5 | 10/11/2007 | FD | KWDD0044-SD-AA-AB-1 |
| KWL | KWDD0045 | 0 | 0.5 | 10/11/2007 | | KWDD0045-SD-AA-AB-0 |
| KWL | KWDD0045 | 0 | 0.5 | 3/16/2011 | | KWDD0045-SD-AA-AB-0-A |
| KWL | KWDD0046 | 0 | 0.5 | 10/11/2007 | | KWDD0046-SD-AA-AB-0 |
| KWL | KWDD0047 | 0 | 0.5 | 10/16/2007 | | KWDD0047-SD-AA-AB-0 |
| KWL | KWDD0048 | 0 | 0.5 | 10/16/2007 | | KWDD0048-SD-AA-AB-0 |
| KWL | KWDD0049 | 0 | 0.5 | 10/16/2007 | | KWDD0049-SD-AA-AB-0 |
| KWL | KWDD0049 | 0 | 0.5 | 3/16/2011 | | KWDD0049-SD-AA-AB-0-A |
| KWL | KWDD0050 | 0 | 0.5 | 10/16/2007 | | KWDD0050-SD-AA-AB-0 |
| KWL | KWDD0051 | 0 | 0.5 | 10/16/2007 | | KWDD0051-SD-AA-AB-0 |
| KWL | KWDD0052 | 0 | 0.5 | 10/16/2007 | | KWDD0052-SD-AA-AB-0 |
| KWL | KWDD0053 | 0 | 0.5 | 10/16/2007 | | KWDD0053-SD-AA-AB-0 |
| KWL | KWDD0054 | 0 | 0.5 | 10/16/2007 | | KWDD0054-SD-AA-AB-0 |
| KWL | KWDD0054 | 0 | 0.5 | 3/16/2011 | | KWDD0054-SD-AA-AB-0-A |
| KWL | KWDD0055 | 0 | 0.5 | 10/16/2007 | | KWDD0055-SD-AA-AB-0 |
| KWL | KWDD0055 | 0 | 0.5 | 6/26/2008 | | KWDD0055-SD-AA-AB-0_A |

**Table 4 Sediment Samples Included in HHRA**

| Exposure Area | Location ID | Upper Depth (ft) | Lower Depth (ft) | Sample Date | Field Duplicate | Sample ID |
|---|---|---|---|---|---|---|
| KWL | KWDD0055 | 0 | 0.5 | 10/16/2007 | FD | KWDD0055-SD-AA-AB-1 |
| KWL | KWDD0056 | 0 | 0.5 | 10/16/2007 | | KWDD0056-SD-AA-AB-0 |
| KWL | KWDD0057 | 0 | 0.5 | 10/16/2007 | | KWDD0057-SD-AA-AB-0 |
| KWL | KWDD0058 | 0 | 0.5 | 10/16/2007 | | KWDD0058-SD-AA-AB-0 |
| KWL | KWDD0059 | 0 | 0.5 | 10/17/2007 | | KWDD0059-SD-AA-AB-0 |
| KWL | KWDD0060 | 0 | 0.5 | 10/17/2007 | | KWDD0060-SD-AA-AB-0 |
| KWL | KWDD0061 | 0 | 0.5 | 10/17/2007 | | KWDD0061-SD-AA-AB-0 |
| KWL | KWDD0062 | 0 | 0.5 | 10/17/2007 | | KWDD0062-SD-AA-AB-0 |
| KWL | KWDD0063 | 0 | 0.5 | 10/17/2007 | | KWDD0063-SD-AA-AB-0 |
| KWL | KWDD0064 | 0 | 0.5 | 10/17/2007 | | KWDD0064-SD-AA-AB-0 |
| KWL | KWDD0065 | 0 | 0.5 | 10/17/2007 | | KWDD0065-SD-AA-AB-0 |
| KWL | KWDD0066 | 0 | 0.5 | 10/17/2007 | | KWDD0066-SD-AA-AB-0 |
| KWL | KWDD0067 | 0 | 0.5 | 10/18/2007 | | KWDD0067-SD-AA-AB-0 |
| KWL | KWDD0068 | 0 | 0.5 | 10/18/2007 | | KWDD0068-SD-AA-AB-0 |
| KWL | KWDD0069 | 0 | 0.5 | 10/18/2007 | | KWDD0069-SD-AA-AB-0 |
| KWL | KWDD0070 | 0 | 0.5 | 10/18/2007 | | KWDD0070-SD-AA-AB-0 |
| KWL | KWDD0071 | 0 | 0.5 | 10/18/2007 | | KWDD0071-SD-AA-AB-0 |
| KWL | KWDD0072 | 0 | 0.5 | 10/18/2007 | | KWDD0072-SD-AA-AB-0 |
| KWL | KWDD0072 | 0 | 0.5 | 10/18/2007 | FD | KWDD0072-SD-AA-AB-1 |
| KWL | KWDD0073 | 0 | 0.5 | 10/18/2007 | | KWDD0073-SD-AA-AB-0 |
| KWL | KWDD0074 | 0 | 0.5 | 10/18/2007 | | KWDD0074-SD-AA-AB-0 |
| KWL | KWDD0074 | 0 | 0.5 | 10/18/2007 | FD | KWDD0074-SD-AA-AB-1 |
| KWL | KWDD0075 | 0 | 0.5 | 10/18/2007 | | KWDD0075-SD-AA-AB-0 |
| KWL | KWDD0076 | 0 | 0.5 | 10/18/2007 | | KWDD0076-SD-AA-AB-0 |
| KWL | KWDD0077 | 0 | 0.5 | 10/22/2007 | | KWDD0077-SD-AA-AB-0 |
| KWL | KWDD0078 | 0 | 0.5 | 10/22/2007 | | KWDD0078-SD-AA-AB-0 |
| KWL | KWDD0079 | 0 | 0.5 | 10/22/2007 | | KWDD0079-SD-AA-AB-0 |
| KWL | KWDD0080 | 0 | 0.5 | 10/22/2007 | | KWDD0080-SD-AA-AB-0 |
| KWL | KWDD0081 | 0 | 0.5 | 10/22/2007 | | KWDD0081-SD-AA-AB-0 |
| KWL | KWDD0082 | 0 | 0.5 | 10/22/2007 | | KWDD0082-SD-AA-AB-0 |
| KWL | KWDD0083 | 0 | 0.5 | 10/22/2007 | | KWDD0083-SD-AA-AB-0 |
| KWL | KWDD0084 | 0 | 0.5 | 10/22/2007 | | KWDD0084-SD-AA-AB-0 |
| KWL | KWDD0084 | 0 | 0.5 | 3/17/2011 | | KWDD0084-SD-AA-AB-0-A |
| KWL | KWDD0085 | 0 | 0.5 | 10/22/2007 | | KWDD0085-SD-AA-AB-0 |
| KWL | KWDD0086 | 0 | 0.5 | 10/22/2007 | | KWDD0086-SD-AA-AB-0 |
| KWL | KWDD0087 | 0 | 0.5 | 10/23/2007 | | KWDD0087-SD-AA-AB-0 |
| KWL | KWDD0088 | 0 | 0.5 | 10/23/2007 | | KWDD0088-SD-AA-AB-0 |
| KWL | KWDD0089 | 0 | 0.5 | 10/23/2007 | | KWDD0089-SD-AA-AB-0 |
| KWL | KWDD0089 | 0 | 0.5 | 3/16/2011 | | KWDD0089-SD-AA-AB-0-A |
| KWL | KWDD0090 | 0 | 0.5 | 10/23/2007 | | KWDD0090-SD-AA-AB-0 |
| KWL | KWDD0090 | 0 | 0.5 | 10/23/2007 | FD | KWDD0090-SD-AA-AB-1 |
| KWL | KWDD0091 | 0 | 0.5 | 10/23/2007 | | KWDD0091-SD-AA-AB-0 |
| KWL | KWDD0092 | 0 | 0.5 | 10/23/2007 | | KWDD0092-SD-AA-AB-0 |
| KWL | KWDD0092 | 0 | 0.5 | 3/16/2011 | | KWDD0092-SD-AA-AB-0-A |
| KWL | KWDD0092 | 0 | 0.5 | 10/23/2007 | FD | KWDD0092-SD-AA-AB-1 |
| KWL | KWDD0093 | 0 | 0.5 | 10/23/2007 | | KWDD0093-SD-AA-AB-0 |
| KWL | KWDD0094 | 0 | 0.5 | 10/23/2007 | | KWDD0094-SD-AA-AB-0 |
| KWL | KWDD0094 | 0 | 0.5 | 3/16/2011 | | KWDD0094-SD-AA-AB-0-A |
| KWL | KWDD0095 | 0 | 0.5 | 10/23/2007 | | KWDD0095-SD-AA-AB-0 |
| KWL | KWDD0096 | 0 | 0.5 | 10/23/2007 | | KWDD0096-SD-AA-AB-0 |
| KWL | KWDD0097 | 0 | 0.5 | 10/30/2007 | | KWDD0097-SD-AA-AB-0 |
| KWL | KWDD0098 | 0 | 0.5 | 10/30/2007 | | KWDD0098-SD-AA-AB-0 |
| KWL | KWDD0098 | 0 | 0.5 | 3/17/2011 | | KWDD0098-SD-AA-AB-0-A |
| KWL | KWDD0099 | 0 | 0.5 | 10/30/2007 | | KWDD0099-SD-AA-AB-0 |
| KWL | KWDD0100 | 0 | 0.5 | 10/30/2007 | | KWDD0100-SD-AA-AB-0 |
| KWL | KWDD0100 | 0 | 0.5 | 3/16/2011 | | KWDD0100-SD-AA-AB-0-A |
| KWL | KWDD0101 | 0 | 0.5 | 10/30/2007 | | KWDD0101-SD-AA-AB-0 |

**Table 4 Sediment Samples Included in HHRA**

| Exposure Area | Location ID | Upper Depth (ft) | Lower Depth (ft) | Sample Date | Field Duplicate | Sample ID |
|---|---|---|---|---|---|---|
| KWL | KWDD0102 | 0 | 0.5 | 10/30/2007 | | KWDD0102-SD-AA-AB-0 |
| KWL | KWDD0103 | 0 | 0.5 | 10/30/2007 | | KWDD0103-SD-AA-AB-0 |
| KWL | KWDD0104 | 0 | 0.5 | 10/30/2007 | | KWDD0104-SD-AA-AB-0 |
| KWL | KWDD0105 | 0 | 0.5 | 10/30/2007 | | KWDD0105-SD-AA-AB-0 |
| KWL | KWDD0105 | 0 | 0.5 | 6/26/2008 | | KWDD0105-SD-AA-AB-0_A |
| KWL | KWDD0105 | 0 | 0.5 | 10/30/2007 | FD | KWDD0105-SD-AA-AB-1 |
| KWL | KWDD0106 | 0 | 0.5 | 10/30/2007 | | KWDD0106-SD-AA-AB-0 |
| KWL | KWDD0107 | 0 | 0.5 | 10/30/2007 | | KWDD0107-SD-AA-AB-0 |
| KWL | KWDD0112 | 0 | 0.5 | 6/23/2008 | | KWDD0112-SD-AA-AB-0 |
| SL | SLDD0001 | 0 | 0.5 | 10/19/2009 | | SLDD0001-SD-AA-AB-0 |
| SL | SLDD0002 | 0 | 0.5 | 10/19/2009 | | SLDD0002-SD-AA-AB-0 |
| SL | SLDD0003 | 0 | 0.5 | 10/19/2009 | | SLDD0003-SD-AA-AB-0 |
| SL | SLDD0004 | 0 | 0.5 | 10/19/2009 | | SLDD0004-SD-AA-AB-0 |
| SL | SLDD0005 | 0 | 0.5 | 10/19/2009 | | SLDD0005-SD-AA-AB-0 |
| SL | SLDD0006 | 0 | 0.5 | 10/19/2009 | | SLDD0006-SD-AA-AB-0 |
| SL | SLDD0007 | 0 | 0.5 | 10/20/2009 | | SLDD0007-SD-AA-AB-0 |
| SL | SLDD0008 | 0 | 0.5 | 10/20/2009 | | SLDD0008-SD-AA-AB-0 |
| SL | SLDD0008 | 0 | 0.5 | 10/20/2009 | FD | SLDD0008-SD-AA-AB-1 |
| SL | SLDD0009 | 0 | 0.5 | 10/20/2009 | | SLDD0009-SD-AA-AB-0 |
| SL | SLDD0010 | 0 | 0.5 | 10/20/2009 | | SLDD0010-SD-AA-AB-0 |
| SL | SLDD0011 | 0 | 0.5 | 10/20/2009 | | SLDD0011-SD-AA-AB-0 |
| SL | SLDD0012 | 0 | 0.5 | 10/20/2009 | | SLDD0012-SD-AA-AB-0 |
| SL | SLDD0013 | 0 | 0.5 | 10/20/2009 | | SLDD0013-SD-AA-AB-0 |
| SL | SLDD0014 | 0 | 0.5 | 10/20/2009 | | SLDD0014-SD-AA-AB-0 |
| SL | SLDD0015 | 0 | 0.5 | 10/20/2009 | | SLDD0015-SD-AA-AB-0 |
| SL | SLDD0016 | 0 | 0.5 | 10/20/2009 | | SLDD0016-SD-AA-AB-0 |
| SL | SLDD0017 | 0 | 0.5 | 10/21/2009 | | SLDD0017-SD-AA-AB-0 |
| SL | SLDD0018 | 0 | 0.5 | 10/21/2009 | | SLDD0018-SD-AA-AB-0 |
| SL | SLDD0019 | 0 | 0.5 | 10/21/2009 | | SLDD0019-SD-AA-AB-0 |
| SL | SLDD0019 | 0 | 0.5 | 10/21/2009 | FD | SLDD0019-SD-AA-AB-1 |
| SL | SLDD0020 | 0 | 0.5 | 10/21/2009 | | SLDD0020-SD-AA-AB-0 |
| SL | SLDD0021 | 0 | 0.5 | 10/21/2009 | | SLDD0021-SD-AA-AB-0 |
| SL | SLDD0022 | 0 | 0.5 | 10/21/2009 | | SLDD0022-SD-AA-AB-0 |
| SL | SLDD0023 | 0 | 0.5 | 10/21/2009 | | SLDD0023-SD-AA-AB-0 |
| SL | SLDD0024 | 0 | 0.5 | 10/21/2009 | | SLDD0024-SD-AA-AB-0 |
| SL | SLDD0025 | 0 | 0.5 | 10/21/2009 | | SLDD0025-SD-AA-AB-0 |
| SL | SLDD0026 | 0 | 0.5 | 10/22/2009 | | SLDD0026-SD-AA-AB-0 |
| SL | SLDD0027 | 0 | 0.5 | 10/22/2009 | | SLDD0027-SD-AA-AB-0 |
| SL | SLDD0028 | 0 | 0.5 | 10/22/2009 | | SLDD0028-SD-AA-AB-0 |
| SL | SLDD0029 | 0 | 0.5 | 10/22/2009 | | SLDD0029-SD-AA-AB-0 |
| SL | SLDD0030 | 0 | 0.5 | 10/22/2009 | | SLDD0030-SD-AA-AB-0 |
| SL | SLDD0031 | 0 | 0.5 | 10/22/2009 | | SLDD0031-SD-AA-AB-0 |
| SL | SLDD0032 | 0 | 0.5 | 10/22/2009 | | SLDD0032-SD-AA-AB-0 |
| SL | SLDD0033 | 0 | 0.5 | 10/22/2009 | | SLDD0033-SD-AA-AB-0 |

**Table 5 Surface Water Sample Locations Included in HHRA**

| Exposure Area | Location ID |
|---|---|
| BWL | BSBEDW13 |
| BWL | BSBEDW14 |
| BWL | BSBEDW15 |
| BWL | BWDW0001 |
| BWL | BWDW0002 |
| BWL | BWDW0003 |
| BWL | BWDW0004 |
| BWL | BWDW0005 |
| BWL | BWDW0006 |
| BWL | BWDW0007 |
| BWL | BWDW0008 |
| BWL | BWDW0009 |
| BWL | BWDW0010 |
| HC | HCDW0006 |
| HC | HCDW0007 |
| HC | HCDW0008 |
| HC | HCDW0009 |
| HC | HCDW0010 |
| HC | HCDW0011 |
| HC | HCDW0012 |
| HC | HCDW0013 |
| HC | HCDW0014 |
| HC | HCDW0015 |
| HC | HCDW0016 |
| HC | HCDW0017 |
| HC | HCDW0018 |
| KWL | HCDW0019 |
| KWL | KWDW0002 |
| KWL | KWDW0003 |
| KWL | KWDW0004 |
| KWL | KWDW0005 |
| KWL | KWDW0006 |
| KWL | KWDW0007 |
| KWL | KWDW0008 |
| KWL | KWDW0009 |
| KWL | KWDW0010 |
| KWL | KWDW0011 |
| SL | SLDW0001 |
| SL | SLDW0002 |
| SL | SLDW0003 |
| SL | SLDW0004 |
| SL | SLDW0005 |
| SL | SLDW0006 |
| SL | SLDW0007 |
| SL | SLDW0008 |
| SL | SLDW0009 |
| SL | SLDW0010 |
| SL | SLDW0011 |
| SL | SLDW0012 |
| SL | SLDW0013 |
| SL | SLDW0014 |
| SL | SLDW0015 |
| SL | SLDW0016 |

**Table 6 Surface Water Samples Included in HHRA**

| Exposure Area | Location ID | Upper Depth (ft) | Lower Depth (ft) | Sample Date | Field Duplicate | Sample ID |
|---|---|---|---|---|---|---|
| BWL | BSBEDW13 | 0 | 0.5 | 10/29/2015 | | BSBEDW13-SW-AA-R3-0 |
| BWL | BSBEDW13 | 0 | 0.5 | 11/9/2015 | | BSBEDW13-SW-AA-R4-0 |
| BWL | BSBEDW14 | 0 | 0.5 | 10/29/2015 | | BSBEDW14-SW-AA-R3-0 |
| BWL | BSBEDW14 | 0 | 0.5 | 11/9/2015 | | BSBEDW14-SW-AA-R4-0 |
| BWL | BSBEDW15 | 0 | 0.5 | 10/29/2015 | | BSBEDW15-SW-AA-R3-0 |
| BWL | BSBEDW15 | 0 | 0.5 | 11/9/2015 | | BSBEDW15-SW-AA-R4-0 |
| BWL | BWDW0001 | 3 | 3 | 9/12/2005 | | BWDW0001-SW-AG-R1-0 |
| BWL | BWDW0001 | 3 | 3 | 9/12/2005 | FD | BWDW0001-SW-AG-R1-1 |
| BWL | BWDW0001 | 3 | 3 | 10/17/2005 | | BWDW0001-SW-AG-R2-0 |
| BWL | BWDW0001 | 3 | 3 | 10/17/2005 | FD | BWDW0001-SW-AG-R2-1 |
| BWL | BWDW0002 | 3 | 3 | 9/12/2005 | | BWDW0002-SW-AG-R1-0 |
| BWL | BWDW0002 | 3 | 3 | 10/17/2005 | | BWDW0002-SW-AG-R2-0 |
| BWL | BWDW0003 | 3 | 3 | 9/12/2005 | | BWDW0003-SW-AG-R1-0 |
| BWL | BWDW0003 | 3 | 3 | 10/17/2005 | | BWDW0003-SW-AG-R2-0 |
| BWL | BWDW0004 | 3 | 3 | 9/12/2005 | | BWDW0004-SW-AG-R1-0 |
| BWL | BWDW0004 | 3 | 3 | 10/17/2005 | | BWDW0004-SW-AG-R2-0 |
| BWL | BWDW0005 | 3 | 3 | 9/12/2005 | | BWDW0005-SW-AG-R1-0 |
| BWL | BWDW0005 | 3 | 3 | 10/17/2005 | | BWDW0005-SW-AG-R2-0 |
| BWL | BWDW0006 | 3 | 3 | 9/12/2005 | | BWDW0006-SW-AG-R1-0 |
| BWL | BWDW0006 | 3 | 3 | 10/17/2005 | | BWDW0006-SW-AG-R2-0 |
| BWL | BWDW0007 | 3 | 3 | 9/12/2005 | | BWDW0007-SW-AG-R1-0 |
| BWL | BWDW0007 | 3 | 3 | 10/17/2005 | | BWDW0007-SW-AG-R2-0 |
| BWL | BWDW0008 | 0.5 | 0.5 | 10/17/2005 | | BWDW0008-SW-AB-R2-0 |
| BWL | BWDW0008 | 0.5 | 1 | 9/12/2005 | | BWDW0008-SW-AB-R1-0 |
| BWL | BWDW0009 | 0.5 | 0.5 | 9/12/2005 | | BWDW0009-SW-AB-R1-0 |
| BWL | BWDW0009 | 0.5 | 0.5 | 10/18/2005 | | BWDW0009-SW-AB-R2-0 |
| BWL | BWDW0010 | 0.5 | 0.5 | 9/12/2005 | | BWDW0010-SW-AB-R1-0 |
| BWL | BWDW0010 | 0.5 | 0.5 | 10/18/2005 | | BWDW0010-SW-AB-R2-0 |
| BWL | BWDW0010 | 0.5 | 1 | 7/5/2011 | | BWDW0010-SW-AB-R5-0 |
| BWL | BWDW0010 | 0.5 | 1 | 7/5/2011 | | BWDW0010-SW-AB-R5-0F |
| BWL | BWDW0010 | 0.5 | 1 | 7/5/2011 | FD | BWDW0010-SW-AB-R5-1 |
| BWL | BWDW0010 | 0.5 | 1 | 7/5/2011 | FD | BWDW0010-SW-AB-R5-1F |
| HC | HCDW0006 | 0 | 0.5 | 9/14/2005 | | HCDW0006-SW-AA-R1-0 |
| HC | HCDW0006 | 0 | 0.5 | 10/20/2005 | | HCDW0006-SW-AA-R2-0 |
| HC | HCDW0007 | 0 | 0.5 | 9/13/2005 | | HCDW0007-SW-AA-R1-0 |
| HC | HCDW0007 | 0 | 0.5 | 10/20/2005 | | HCDW0007-SW-AA-R2-0 |
| HC | HCDW0008 | 0 | 0.5 | 9/13/2005 | | HCDW0008-SW-AA-R1-0 |
| HC | HCDW0008 | 0 | 0.5 | 10/20/2005 | | HCDW0008-SW-AA-R2-0 |
| HC | HCDW0009 | 0 | 0.5 | 9/13/2005 | | HCDW0009-SW-AA-R1-0 |
| HC | HCDW0009 | 0 | 0.5 | 10/19/2005 | | HCDW0009-SW-AA-R2-0 |
| HC | HCDW0010 | 0 | 0.5 | 9/13/2005 | | HCDW0010-SW-AA-R1-0 |
| HC | HCDW0010 | 0 | 0.5 | 10/19/2005 | | HCDW0010-SW-AA-R2-0 |
| HC | HCDW0011 | 0 | 0.5 | 9/12/2005 | | HCDW0011-SW-AA-R1-0 |
| HC | HCDW0011 | 0 | 0.5 | 10/19/2005 | | HCDW0011-SW-AA-R2-0 |
| HC | HCDW0012 | 0 | 0.5 | 9/12/2005 | | HCDW0012-SW-AA-R1-0 |
| HC | HCDW0012 | 0 | 0.5 | 10/19/2005 | | HCDW0012-SW-AA-R2-0 |
| HC | HCDW0013 | 0 | 0.5 | 9/12/2005 | | HCDW0013-SW-AA-R1-0 |
| HC | HCDW0013 | 0 | 0.5 | 10/19/2005 | | HCDW0013-SW-AA-R2-0 |
| HC | HCDW0014 | 0 | 0.5 | 9/12/2005 | | HCDW0014-SW-AA-R1-0 |
| HC | HCDW0014 | 0 | 0.5 | 10/19/2005 | | HCDW0014-SW-AA-R2-0 |
| HC | HCDW0015 | 0 | 0.5 | 9/12/2005 | | HCDW0015-SW-AA-R1-0 |

**Table 6 Surface Water Samples Included in HHRA**

| Exposure Area | Location ID | Upper Depth (ft) | Lower Depth (ft) | Sample Date | Field Duplicate | Sample ID |
|---|---|---|---|---|---|---|
| HC | HCDW0015 | 0 | 0.5 | 10/19/2005 | | HCDW0015-SW-AA-R2-0 |
| HC | HCDW0016 | 0 | 0.5 | 9/14/2005 | | HCDW0016-SW-AA-R1-0 |
| HC | HCDW0016 | 0 | 0.5 | 10/19/2005 | | HCDW0016-SW-AA-R2-0 |
| HC | HCDW0017 | 0 | 0.5 | 9/13/2005 | | HCDW0017-SW-AA-R1-0 |
| HC | HCDW0017 | 0 | 0.5 | 9/13/2005 | FD | HCDW0017-SW-AA-R1-1 |
| HC | HCDW0017 | 0 | 0.5 | 10/18/2005 | | HCDW0017-SW-AA-R2-0 |
| HC | HCDW0018 | 0 | 0.5 | 9/13/2005 | | HCDW0018-SW-AA-R1-0 |
| HC | HCDW0018 | 0 | 0.5 | 10/18/2005 | | HCDW0018-SW-AA-R2-0 |
| KWL | HCDW0019 | 0 | 0.5 | 9/13/2005 | | HCDW0019-SW-AA-R1-0 |
| KWL | HCDW0019 | 0 | 0.5 | 10/18/2005 | | HCDW0019-SW-AA-R2-0 |
| KWL | KWDW0002 | 0.5 | 0.5 | 10/31/2007 | | KWDW0002-SW-AB-R1-0 |
| KWL | KWDW0003 | 2 | 2 | 10/31/2007 | | KWDW0003-SW-AE-R1-0 |
| KWL | KWDW0004 | 1.5 | 1.5 | 10/31/2007 | | KWDW0004-SW-AD-R1-0 |
| KWL | KWDW0005 | 1.5 | 1.5 | 10/31/2007 | | KWDW0005-SW-AD-R1-0 |
| KWL | KWDW0006 | 1.5 | 1.5 | 10/31/2007 | | KWDW0006-SW-AD-R1-0 |
| KWL | KWDW0007 | 1.5 | 1.5 | 10/31/2007 | | KWDW0007-SW-AD-R1-0 |
| KWL | KWDW0008 | 1.5 | 1.5 | 10/31/2007 | | KWDW0008-SW-AD-R1-0 |
| KWL | KWDW0009 | 1.5 | 1.5 | 10/31/2007 | | KWDW0009-SW-AD-R1-0 |
| KWL | KWDW0010 | 0.5 | 0.5 | 10/31/2007 | | KWDW0010-SW-AB-R1-0 |
| KWL | KWDW0011 | 0.5 | 0.5 | 10/31/2007 | | KWDW0011-SW-AB-R1-0 |
| SL | SLDW0001 | 3.5 | 3.5 | 10/28/2009 | | SLDW0001-SW-AH-R1-0 |
| SL | SLDW0002 | 4 | 4 | 10/27/2009 | | SLDW0002-SW-AI-R1-0 |
| SL | SLDW0003 | 5.5 | 5.5 | 11/1/2012 | | SLDW0003-SW-AL-R2-0 |
| SL | SLDW0003 | 7 | 7 | 10/27/2009 | | SLDW0003-SW-AO-R1-0 |
| SL | SLDW0004 | 9 | 9 | 10/27/2009 | | SLDW0004-SW-AS-R1-0 |
| SL | SLDW0004 | 9 | 9 | 11/1/2012 | | SLDW0004-SW-AS-R2-0 |
| SL | SLDW0005 | 8.5 | 8.5 | 10/27/2009 | | SLDW0005-SW-AR-R1-0 |
| SL | SLDW0005 | 8.5 | 8.5 | 10/27/2009 | FD | SLDW0005-SW-AR-R1-1 |
| SL | SLDW0006 | 8.5 | 8.5 | 10/28/2009 | | SLDW0006-SW-AR-R1-0 |
| SL | SLDW0007 | 5 | 5 | 11/1/2012 | | SLDW0007-SW-AK-R2-0 |
| SL | SLDW0007 | 5 | 5 | 11/1/2012 | FD | SLDW0007-SW-AK-R2-1 |
| SL | SLDW0007 | 5.5 | 5.5 | 10/28/2009 | | SLDW0007-SW-AL-R1-0 |
| SL | SLDW0008 | 4.5 | 4.5 | 10/28/2009 | | SLDW0008-SW-AJ-R1-0 |
| SL | SLDW0009 | 0 | 0.5 | 4/27/2010 | | SLDW0009-SW-AA-R1-0 |
| SL | SLDW0010 | 6 | 6 | 4/27/2010 | | SLDW0010-SW-AM-R1-0 |
| SL | SLDW0010 | 6 | 6 | 4/27/2010 | FD | SLDW0010-SW-AM-R1-1 |
| SL | SLDW0011 | 0.5 | 0.5 | 4/27/2010 | | SLDW0011-SW-AB-R1-0 |
| SL | SLDW0012 | 0 | 0.5 | 4/27/2010 | | SLDW0012-SW-AA-R1-0 |
| SL | SLDW0013 | 0.5 | 0.5 | 4/27/2010 | | SLDW0013-SW-AB-R1-0 |
| SL | SLDW0014 | 3 | 3 | 4/28/2010 | | SLDW0014-SW-AG-R1-0 |
| SL | SLDW0015 | 0 | 0.5 | 4/28/2010 | | SLDW0015-SW-AA-R1-0 |
| SL | SLDW0016 | 0 | 0.5 | 4/28/2010 | | SLDW0016-SW-AA-R1-0 |

**Table 7 Summary of Kirkwood Lake Fish Samples**

| Guild | Species | Fish Sample ID | Number | Zone | Length (cm) | Weight (g) | Fillet Weight (g) | Post-homogenization Fillet Weight (g) | Skin On/Off | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| Benthic Omnivore | Brown bullhead (BB) | KWBB0001-TI-AA-R1-0 | 1 | B | 24.2 | 206 | 36.01 | 31.3 | Off | |
| Benthic Omnivore | Brown bullhead (BB) | KWBB0003-TI-AA-R1-0 | 3 | C | 28.3 | 246.6 | 46.75 | 44.2 | Off | |
| Benthic Omnivore | Brown bullhead (BB) | KWBB0004-TI-AA-R1-0 | 4 | C | 26 | 214.8 | 58.85 | 53.2 | Off | |
| Benthic Omnivore | Brown bullhead (BB) | KWBB0005-TI-AA-R1-0 | 5 | C | 29.8 | 314.5 | 37.8 | 35.1 | Off | |
| Benthic Omnivore | Brown bullhead (BB) | KWBB0006-TI-AA-R1-0 | 6 | C | 31 | 320.6 | 42.26 | 37.7 | Off | |
| Benthic Omnivore | Brown bullhead (BB) | KWBB0007-TI-AA-R1-0 | 7 | C | 26.2 | 185.9 | 34.3 | 31.7 | Off | |
| Benthic Omnivore | Brown bullhead (BB) | KWBB0008-TI-AA-R1-0 | 8 | C | 30 | 278.3 | 44.68 | 40.9 | Off | |
| Benthic Omnivore | Brown bullhead (BB) | KWBB0009-TI-AA-R1-0 | 9 | C | 32.1 | 370.4 | 46.55 | 46.0 | Off | |
| Benthic Omnivore | Brown bullhead (BB) | KWBB0011-TI-AA-R1-0 | 11 | D | 24.4 | 167.5 | 41.17 | 40.0 | Off | |
| Benthic Omnivore | Brown bullhead (BB) | KWBB0012-TI-AA-R1-0 | 12 | D | 29.2 | 299.8 | 51.2 | 50.4 | Off | |
| Benthic Omnivore | Brown bullhead (BB) | KWBB0013-TI-AA-R1-0 | 13 | D | 27.5 | 266 | 47.2 | 42.3 | Off | |
| Benthic Omnivore | Brown bullhead (BB) | KWBB0014-TI-AA-R1-0 | 14 | D | 30 | 297.3 | 44.42 | 42.8 | Off | |
| Benthic Omnivore | Brown bullhead (BB) | KWBB0015-TI-AA-R1-0 | 15 | D | 25.5 | 201.7 | 41.86 | 36.2 | Off | |
| Benthic Omnivore | Brown bullhead (BB) | KWBB0016-TI-AA-R1-0 | 16 | D | 27.2 | 274.7 | 36.88 | 36.3 | Off | |
| Benthic Omnivore | Brown bullhead (BB) | KWBB0017-TI-AA-R1-0 | 17 | D | 26.5 | 222.9 | 51.96 | 51.1 | Off | |
| Benthic Omnivore | Brown bullhead (BB) | KWBB0018-TI-AA-R1-0 | 18 | D | 29 | 264.5 | 35.21 | 34.5 | Off | |
| Benthic Omnivore | Brown bullhead (BB) | KWBB0019-TI-AA-R1-0 | 19 | D | 31.2 | 412.9 | 52.8 | 53.2 | Off | |
| Benthic Omnivore | Brown bullhead (BB) | KWBB0020-TI-AA-R1-0 | 20 | D | 28.5 | 323.7 | 45.93 | 45.3 | Off | |
| Benthic Omnivore | Brown bullhead (BB) | KWBB0021-TI-AA-R1-0 | 21 | D | 30.1 | 321.4 | 42.74 | 41.4 | Off | |
| Benthic Omnivore | Common carp (CC) | KWCC0001-TI-AA-R1-0 | 1 | A | 50 | 1384.3 | 98.57 | 50.7 | Off | |
| Benthic Omnivore | Common carp (CC) | KWCC0002-TI-AA-R1-0 | 2 | A | 54.8 | 2128.3 | 309.7 | 281 | On | Parent sample; averaged with duplicate sample KWCC0002-TI-AA-R1-1 |
| Benthic Omnivore | Common carp (CC) | KWCC0003-TI-AA-R1-0 | 3 | B | 59.2 | 2768.3 | 480.44 | 354 | Off | |
| Benthic Omnivore | Common carp (CC) | KWCC0004-TI-AA-R1-0 | 4 | B | 56 | 2748.9 | 458.89 | 412 | Off | |
| Benthic Omnivore | Common carp (CC) | KWCC0005-TI-AA-R1-0 | 5 | C | 52.5 | 1928.2 | 346.25 | 340 | Off | |
| Benthic Omnivore | Common carp (CC) | KWCC0006-TI-AA-R1-0 | 6 | C | 49.6 | 1776.3 | 339.39 | 337 | Off | |
| Benthic Omnivore | Common carp (CC) | KWCC0007-TI-AA-R1-0 | 7 | D | 43 | 1237.2 | 219.21 | 216 | Off | |
| Benthic Omnivore | Common carp (CC) | KWCC0008-TI-AA-R1-0 | 8 | D | 48.2 | 1625.3 | 268.36 | 243 | Off | Parent sample |
| Benthic Omnivore | Common carp (CC) | KWCC0008-TI-AA-R1-1 | 8 | D | 48.2 | 1625.3 | 262.65 | 257 | On | Field duplicate, not averaged with parent sample, due to skin on/off difference |
| Sport Fish | Black crappie (BC) | KWBC0001-TI-AA-R1-0 | 1 | A | 22 | 153.1 | 40.85 | 37.3 | On | |
| Sport Fish | Black crappie (BC) | KWBC0002-TI-AA-R1-0 | 2 | A | 23 | 180.7 | 46.38 | 37.8 | Off | |
| Sport Fish | Black crappie (BC) | KWBC0003-TI-AA-R1-0 | 3 | B | 20.7 | 121.5 | 45.62 | 41.0 | Off | |
| Sport Fish | Black crappie (BC) | KWBC0004-TI-AA-R1-0 | 4 | B | 21 | 124.7 | 36.11 | 31.9 | Off | |
| Sport Fish | Black crappie (BC) | KWBC0005-TI-AA-R1-0 | 5 | D | 20.2 | 112.6 | 43.8 | 40.3 | Off | |
| Sport Fish | Black crappie (BC) | KWBC0006-TI-AA-R1-0 | 6 | D | 20.5 | 120.5 | 43.38 | 38.8 | Off | |
| Sport Fish | Black crappie (BC) | KWBC0007-TI-AA-R1-0 | 1 | B | 2 | 18 | 86.2 | 32.6 | On | |
| Sport Fish | Black crappie (BC) | KWBC0008-TI-AA-R1-0 | 2 | C | 17.5 | 72.6 | 37.7 | 32.1 | On | |
| Sport Fish | Largemouth bass (LB) | KWLB0001-TI-AA-R1-0 | 1 | A | 31.1 | 493.6 | 108.92 | 98.9 | Off | |
| Sport Fish | Largemouth bass (LB) | KWLB0002-TI-AA-R1-0 | 2 | B | 30.9 | 420.3 | 87.76 | 83.9 | On | Parent sample, averaged with duplicate sample KWLB0002-TI-AA-R1-1 |
| Sport Fish | Largemouth bass (LB) | KWLB0003-TI-AA-R1-0 | 3 | C | 42.2 | 1035.9 | 192.32 | 117 | Off | Parent sample, averaged with duplicate sample KWLB0003-TI-AA-R1-1 |
| Sport Fish | Largemouth bass (LB) | KWLB0004-TI-AA-R1-0 | 4 | C | 30.8 | 428.5 | 82.7 | 55.4 | Off | |
| Sport Fish | Largemouth bass (LB) | KWLB0005-TI-AA-R1-0 | 5 | D | 32.8 | 433.9 | 87.62 | 61.1 | Off | |
| Sport Fish | Sunfish (*Lepomis sp.*) | KWSF0005-TI-AA-R1-0 | 5 | B | 5 | 17.4 | 97.6 | 38.4 | On | |
| Sport Fish | Sunfish (*Lepomis sp.*) | KWSF0007-TI-AA-R1-0 | 7 | C | 5 | 17 | 94.3 | 35.3 | On | |
| Sport Fish | Sunfish (*Lepomis sp.*) | KWSF0009-TI-AA-R1-0 | 9 | D | 6 | 17.5 | 105.8 | 33.4 | On | |
| Sport Fish | Sunfish (*Lepomis sp.*) | KWSF0010-TI-AA-R1-0 | | A-B | | | | 39.6 | On | Composite of KWSF0003-TI-AA-R1-0 and KWSF0004-TI-AA-R1-0 |
| Sport Fish | Sunfish (*Lepomis sp.*) | KWSF0011-TI-AA-R1-0 | | C-D | | | | 43.4 | On | Composite of KWSF0006-TI-AA-R1-0 and KWSF0008-TI-AA-R1-0 |

# Appendix B

## Data Used in Risk Assessment

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | BWSB0001 | BWSB0001 | BWSB0001 | BWSB0002 | BWSB0003 | BWSB0004 | BWSB0004 | BWSB0005 | BWSB0006 | BWSB0007 | BWSB0008 | BWSB0009 | BWSB0011 | BWSB0012 | BWSB0013 | BWSB0014 | BWSB0015 | BWSB0016 | BWSB0016 | BWSB0017 | BWSB0018 |
| | | Field Sample ID | BWSB0001-SS-AA-AE-0 | BWSB0001-SS-AD-AE-0 | BWSB0001-SS-AD-AE-1 | BWSB0002-SS-AA-AD-0 | BWSB0003-SS-AA-AD-0 | BWSB0004-SS-AA-AE-0 | BWSB0004-SS-AA-AE-1 | BWSB0005-SS-AA-AE-0 | BWSB0006-SS-AA-AD-0 | BWSB0007-SS-AA-AE-0 | BWSB0008-SS-AA-AB-0 | BWSB0009-SS-AA-AE-0 | BWSB0011-SS-AA-AB-0 | BWSB0012-SS-AA-AB-0 | BWSB0013-SS-AA-AB-0 | BWSB0014-SS-AA-AB-0 | BWSB0015-SS-AA-AB-0 | BWSB0016-SS-AA-AB-0 | BWSB0016-SS-AD-AE-0 | BWSB0017-SS-AA-AB-0 | BWSB0018-SS-AA-AB-0 |
| | | Sample Date | 7/18/05 | 12/26/07 | 12/26/07 | 7/18/05 | 7/19/05 | 7/19/05 | 7/19/05 | 7/19/05 | 7/19/05 | 7/19/05 | 7/19/05 | 7/20/05 | 7/21/05 | 7/21/05 | 7/21/05 | 7/21/05 | 7/21/05 | 7/21/05 | 12/19/07 | 7/21/05 | 7/21/05 |
| | | Depth (ft) | 0-2 | 1.5-2 | 1.5-2 | 0-1.5 | 0-1.5 | 0-2 | 0-2 | 0-2 | 0-1.5 | 0-2 | 0-0.5 | 0-2 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 1.5-2 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 1320 | 441 | 534 | 2240 | 1220 | 749 | 720 | 659 | 2410 | 472 | 1300 | 1270 | 563 | 1030 | 1260 J | 482 | 9480 J | 8140 J | 8740 J | 1370 | 679 |
| METALS | ANTIMONY | MG/KG | 0.68 U | 0.78 UJ | 0.76 UJ | 0.59 U | 0.67 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.78 J | 0.78 U | 0.6 U | 0.59 UJ | 0.68 UJ | 1.2 UJ | 2.6 UJ | 1.6 J | 1.4 UJ | 2 J | 0.66 UJ | 0.55 UJ |
| METALS | ARSENIC | MG/KG | 14.3 J | 0.73 U | 0.71 U | 3.7 J | 3.4 J | 0.95 UJ | 0.96 UJ | 0.96 UJ | 1.6 J | 1.2 UJ | 1.3 UJ | 49.4 J | 0.6 J | 0.81 J | 3 J | 0.4 U | 99.1 J | 108 J | 1110 J | 3.1 J | 3.5 |
| METALS | BARIUM | MG/KG | 44.7 J | 3.6 J | 4.5 J | 8.4 J | 12.1 J | 13.3 J | 14.7 J | 2.2 J | 4.9 J | 2.6 J | 4.6 J | 13.5 J | 3.8 J | 5.1 J | 15.5 J | 4.4 J | 217 J | 256 J | 67.8 J | 3.8 J | 8.2 J |
| METALS | BERYLLIUM | MG/KG | 0.07 J | 0.05 U | 0.05 U | 0.07 J | 0.07 J | 0.02 U | 0.02 J | 0.02 U | 0.05 J | 0.03 U | 0.03 U | 0.02 J | 0.11 J | 0.14 J | 0.35 J | 0.13 J | 1.2 J | 1.2 J | 0.78 J | 0.22 J | 0.14 J |
| METALS | CADMIUM | MG/KG | 0.18 J | 0.09 U | 0.09 U | 0.04 U | 0.35 J | 0.04 U | 0.04 U | 0.04 U | 0.04 U | 0.05 U | 0.1 J | 0.04 U | 0.095 J | 0.068 J | 0.12 UJ | 0.098 J | 4.6 J | 3.8 J | 18.1 J | 0.066 U | 0.055 U |
| METALS | CALCIUM | MG/KG | 1140 J | 112 J | 110 J | 417 J | 161 J | 47.1 J | 43.7 J | 26.9 J | 20.4 J | 31.8 J | 65.2 J | 158 J | 50.8 J | 42.7 J | 252 J | 42.2 J | 8210 J | 1690 J | 5420 J | 127 J | 69.6 J |
| METALS | CHROMIUM | MG/KG | 12.3 J | 2.1 J | 2.1 J | 6.4 J | 4.5 J | 2.4 J | 2.7 J | 2.8 J | 5.8 J | 2.3 J | 3.3 J | 4.1 J | 2.9 J | 3.7 J | 4.7 J | 2.5 J | 84 J | 52.7 J | 280 J | 5.1 J | 6.4 J |
| METALS | COBALT | MG/KG | 0.26 J | 0.55 U | 0.53 U | 0.25 J | 0.25 J | 0.19 U | 0.19 U | 0.19 U | 0.21 J | 0.24 U | 0.26 U | 0.31 J | 1.6 J | 1.5 J | 2.1 J | 1.8 J | 4.3 J | 4.8 J | 2.4 J | 3.6 J | 0.41 J |
| METALS | COPPER | MG/KG | 9.4 J | 0.95 J | 1.1 J | 2.6 J | 3 J | 1.5 J | 1.3 J | 1.2 J | 2.1 J | 2.9 J | 3.2 J | 2.8 J | 3.1 J | 4.2 J | 6.3 J | 2.1 J | 69.2 J | 42.6 J | 248 J | 3.1 J | 6.4 J |
| METALS | CYANIDE | MG/KG | 0.07 U | 0.04 U | 0.04 U | 0.07 U | 0.07 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.08 U | 0.08 U | 0.07 U | 0.56 J | 0.087 J | 0.39 J | 0.071 J | 3.4 J | 4.3 J | 0.86 J | 0.17 J | 0.14 J |
| METALS | IRON | MG/KG | 3030 | 604 | 678 | 5430 | 1410 | 1360 | 1390 | 1440 | 4470 | 420 | 365 | 5510 | R | R | R | R | R | R | 13100 J | R | R |
| METALS | LEAD | MG/KG | 34.4 | 3.3 | 4.3 | 16.1 | 36 | 16.1 | 24.9 | 16.8 | 24.2 | 23.2 | 10.7 | 19.5 | 32.5 | 70.5 | 96.2 J | 5.5 | 996 J | 508 J | 3310 J | 54.3 | 38.4 |
| METALS | MAGNESIUM | MG/KG | 92.9 J | 27.3 J | 29.8 J | 82 J | 27.8 J | 25.9 J | 22.9 J | 23.8 J | 45.6 J | 21.5 J | 31.8 J | 48 J | 16.8 J | 27 J | 78.1 J | 19.6 J | 562 J | 397 J | 184 J | 35.5 J | 42.2 J |
| METALS | MANGANESE | MG/KG | 7.7 | 3 J | 3.8 | 11.2 | 3.4 J | 5.5 | 5.3 | 2.3 J | 5.6 | 2.5 J | 3.1 J | 10 | 21.5 | 20.2 | 22.7 J | 28.1 | 22.6 J | 41.8 J | 19.1 J | 2.5 J | 4.4 |
| METALS | MERCURY | MG/KG | 0.06 U | 0.06 U | 0.06 U | 0.05 U | 0.06 U | 0.05 U | 0.05 U | 0.05 U | 0.06 U | 0.06 U | 0.07 U | 0.05 U | 0.08 J | 0.13 J | 0.26 J | 0.06 J | 0.63 J | 0.4 J | 0.3 | 0.13 J | 0.09 J |
| METALS | NICKEL | MG/KG | 0.93 J | 0.21 U | 0.21 U | 1 J | 0.82 J | 0.33 J | 0.24 J | 0.69 J | 0.65 J | 0.28 J | 0.41 J | 1 J | 0.25 J | 0.41 J | 1.6 J | 0.14 U | 14.8 J | 13.3 J | 11.5 J | 0.56 J | 0.58 J |
| METALS | POTASSIUM | MG/KG | 61.5 J | 36.5 J | 43.2 J | 68.9 J | 80.7 J | 33.9 J | 37.9 J | 43.9 J | 64.5 J | 47.5 J | 65.5 J | 56.3 J | 49.9 J | 71.3 J | 180 J | 46.3 J | 318 J | 336 J | 123 J | 104 J | 103 J |
| METALS | SELENIUM | MG/KG | 1.1 U | 1.1 U | 1 U | 0.92 U | 1 U | 0.88 U | 0.89 U | 0.89 U | 0.88 U | 1.1 U | 1.2 U | 0.94 U | 0.53 U | 0.62 U | 1.1 UJ | 0.48 U | 2.6 J | 3.6 J | 2.2 UJ | 2.6 | 0.9 J |
| METALS | SILVER | MG/KG | 0.18 U | 0.21 U | 0.21 U | 0.15 U | 0.17 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.18 U | 0.2 U | 0.16 U | 0.07 U | 0.081 U | 0.19 J | 0.063 U | 0.16 UJ | 0.17 UJ | 0.45 UJ | 0.079 U | 0.068 J |
| METALS | SODIUM | MG/KG | 39.4 U | 29.8 U | 28.9 U | 34.3 U | 38.8 U | 33.1 U | 33.4 U | 33.5 U | 33.1 U | 41.2 U | 45.5 U | 35.2 U | 24.5 U | 28.6 U | 51.1 UJ | 22.2 U | 196 J | 1340 J | 75.6 J | 68.4 J | 23 U |
| METALS | THALLIUM | MG/KG | 1.1 U | 1.2 U | 1.2 U | 0.96 U | 1.1 U | 0.93 U | 0.93 U | 0.94 U | 0.93 U | 1.2 U | 1.3 U | 0.98 U | 0.83 J | 0.49 U | 1.2 J | 1.2 J | 2.3 J | 1.5 J | 2.5 UJ | 0.73 J | 0.39 U |
| METALS | VANADIUM | MG/KG | 4.4 J | 2.1 J | 2.2 J | 8.8 J | 3.3 J | 2.6 J | 2.6 J | 3.1 J | 7.1 J | 2.2 J | 2.2 J | 4.5 J | 4.8 J | 5.2 J | 6.6 J | 4.6 J | 34.8 J | 26.4 J | 15.7 J | 7.1 J | 6.3 J |
| METALS | ZINC | MG/KG | 26.7 J | 4.3 J | 4.5 J | 7.6 J | 23.5 J | 6.8 J | 5.7 J | 2.1 J | 3 J | 2.7 J | 4.8 J | 10.4 J | 5.5 J | 3.4 J | 8.1 J | 2.7 J | 473 J | 415 J | R | 533 J | 12.4 J |
| PEST/PCB | 4,4'-DDD | MG/KG | 0.0041 UJ | | | 0.0038 UJ | 0.0042 UJ | 0.0036 UJ | 0.0036 UJ | 0.0036 UJ | 0.0036 UJ | 0.0045 UJ | 0.0049 UJ | 0.0038 UJ | 0.0046 U | 0.0054 U | 0.0096 UJ | 0.0042 U | 0.039 J | 0.011 UJ | | 0.024 | 0.0043 U |
| PEST/PCB | 4,4'-DDE | MG/KG | 0.0041 U | | | 0.0038 U | 0.0042 U | 0.0036 U | 0.0036 U | 0.0036 U | 0.0036 U | 0.0045 U | 0.0049 U | 0.0038 U | 0.0046 U | 0.0054 U | 0.0096 UJ | 0.0042 U | 0.01 J | 0.011 UJ | | 0.0051 J | 0.0043 U |
| PEST/PCB | 4,4'-DDT | MG/KG | 0.0041 U | | | 0.0038 U | 0.0042 U | 0.0036 U | 0.0036 U | 0.0036 U | 0.0036 U | 0.0045 U | 0.0049 U | 0.0038 U | 0.0046 U | 0.0054 U | 0.0096 UJ | 0.0042 U | 0.0069 J | 0.011 UJ | | 0.0052 U | 0.0043 U |
| PEST/PCB | ALDRIN | MG/KG | 0.0021 U | | | 0.002 U | 0.0022 U | 0.0018 U | 0.0018 U | 0.0019 U | 0.0019 U | 0.0023 U | 0.0025 U | 0.002 U | 0.0024 U | 0.0028 U | 0.0049 UJ | 0.0021 U | 0.0053 UJ | 0.0057 UJ | | 0.0027 U | 0.0022 U |
| PEST/PCB | ALPHA-BHC | MG/KG | 0.0021 U | | | 0.002 U | 0.0022 U | 0.0018 U | 0.0018 U | 0.0019 U | 0.0019 U | 0.0023 U | 0.0025 U | 0.002 U | 0.0024 U | 0.0028 U | 0.0049 UJ | 0.0021 U | 0.0053 UJ | 0.0057 UJ | | 0.0027 U | 0.0022 U |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | 0.0021 U | | | 0.002 U | 0.0022 U | 0.0018 U | 0.0018 U | 0.0019 U | 0.0019 U | 0.0023 U | 0.0025 U | 0.002 U | 0.0024 U | 0.0028 U | 0.0049 UJ | 0.0021 U | 0.0053 UJ | 0.0057 UJ | | 0.0027 U | 0.0022 U |
| PEST/PCB | AROCLOR-1016 | MG/KG | 0.041 U | | | 0.038 U | 0.042 U | 0.036 U | 0.036 U | 0.036 U | 0.036 U | 0.045 U | 0.049 U | 0.038 U | 0.046 U | 0.054 U | 0.096 UJ | 0.042 U | 0.1 UJ | 0.11 UJ | | 0.052 U | 0.043 U |
| PEST/PCB | AROCLOR-1221 | MG/KG | 0.084 U | | | 0.077 U | 0.085 U | 0.073 U | 0.073 U | 0.073 U | 0.074 U | 0.091 U | 0.1 U | 0.078 U | 0.093 U | 0.11 U | 0.19 UJ | 0.084 U | 0.21 UJ | 0.23 UJ | | 0.11 U | 0.088 U |
| PEST/PCB | AROCLOR-1232 | MG/KG | 0.041 U | | | 0.038 U | 0.042 U | 0.036 U | 0.036 U | 0.036 U | 0.036 U | 0.045 U | 0.049 U | 0.038 U | 0.046 U | 0.054 U | 0.096 UJ | 0.042 U | 0.1 UJ | 0.11 UJ | | 0.052 U | 0.043 U |
| PEST/PCB | AROCLOR-1242 | MG/KG | 0.041 U | | | 0.038 U | 0.042 U | 0.036 U | 0.036 U | 0.036 U | 0.036 U | 0.045 U | 0.049 U | 0.038 U | 0.046 U | 0.054 U | 0.096 UJ | 0.042 U | 0.1 UJ | 0.11 UJ | | 0.052 U | 0.043 U |
| PEST/PCB | AROCLOR-1248 | MG/KG | 0.041 U | | | 0.038 U | 0.042 U | 0.036 U | 0.036 U | 0.036 U | 0.036 U | 0.045 U | 0.049 U | 0.038 U | 0.046 U | 0.054 U | 0.096 UJ | 0.042 U | 0.1 UJ | 0.11 UJ | | 0.052 U | 0.043 U |
| PEST/PCB | AROCLOR-1254 | MG/KG | 0.041 U | | | 0.038 U | 0.042 U | 0.036 U | 0.036 U | 0.036 U | 0.036 U | 0.045 U | 0.049 U | 0.038 U | 0.046 U | 0.054 U | 0.096 UJ | 0.042 U | 0.082 J | 0.11 UJ | | 0.052 U | 0.043 U |
| PEST/PCB | AROCLOR-1260 | MG/KG | 0.041 U | | | 0.038 U | 0.042 U | 0.036 U | 0.036 U | 0.036 U | 0.036 U | 0.045 U | 0.049 U | 0.038 U | 0.046 U | 0.054 U | 0.096 UJ | 0.042 U | 0.1 UJ | 0.11 UJ | | 0.027 J | 0.043 U |
| PEST/PCB | BETA-BHC | MG/KG | 0.0021 U | | | 0.002 U | 0.0022 U | 0.0018 U | 0.0018 U | 0.0019 U | 0.0019 U | 0.0023 U | 0.0025 U | 0.002 U | 0.0024 U | 0.0028 U | 0.0049 UJ | 0.0021 U | 0.0053 UJ | 0.0057 UJ | | 0.0027 U | 0.0022 U |
| PEST/PCB | DELTA-BHC | MG/KG | 0.0021 U | | | 0.002 U | 0.0022 U | 0.0018 U | 0.0018 U | 0.0019 U | 0.0019 U | 0.0023 U | 0.0025 U | 0.002 U | 0.0024 U | 0.0028 U | 0.0049 UJ | 0.0021 U | 0.0053 UJ | 0.0057 UJ | | 0.0027 U | 0.0022 U |
| PEST/PCB | DIELDRIN | MG/KG | 0.0041 U | | | 0.0038 U | 0.0042 U | 0.0036 U | 0.0036 U | 0.0036 U | 0.0036 U | 0.0045 U | 0.0049 U | 0.0038 U | 0.0046 U | 0.0054 U | 0.0096 UJ | 0.0042 U | 0.01 UJ | 0.011 UJ | | 0.0052 U | 0.0043 U |
| PEST/PCB | ENDOSULFAN I | MG/KG | 0.0021 U | | | 0.002 U | 0.0022 U | 0.0018 U | 0.0018 U | 0.0019 U | 0.0019 U | 0.0023 U | 0.0025 U | 0.002 U | 0.0024 U | 0.0028 U | 0.0049 UJ | 0.0021 U | 0.0053 UJ | 0.0057 UJ | | 0.0027 U | 0.0022 U |
| PEST/PCB | ENDOSULFAN II | MG/KG | 0.0041 U | | | 0.0038 U | 0.0042 U | 0.0036 U | 0.0036 U | 0.0036 U | 0.0036 U | 0.0045 U | 0.0049 U | 0.0038 U | 0.0046 U | 0.0054 U | 0.0096 UJ | 0.0042 U | 0.01 UJ | 0.011 UJ | | 0.0052 U | 0.0043 U |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | 0.0041 U | | | 0.0038 U | 0.0042 U | 0.0036 U | 0.0036 U | 0.0036 U | 0.0036 U | 0.0045 U | 0.0049 U | 0.0038 U | 0.0046 U | 0.0054 U | 0.0096 UJ | 0.0042 U | 0.01 UJ | 0.011 UJ | | 0.0052 U | 0.0043 U |
| PEST/PCB | ENDRIN | MG/KG | 0.0041 U | | | 0.0038 U | 0.0042 U | 0.0036 U | 0.0036 U | 0.0036 U | 0.0036 U | 0.0045 U | 0.0049 U | 0.0038 U | 0.0046 U | 0.0054 U | 0.0096 UJ | 0.0042 U | 0.01 UJ | 0.011 UJ | | 0.0052 U | 0.0043 U |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | 0.0041 U | | | 0.0038 U | 0.0042 U | 0.0036 U | 0.0036 U | 0.0036 U | 0.0036 U | 0.0045 U | 0.0049 U | 0.0038 U | 0.0046 U | 0.0054 U | 0.0096 UJ | 0.0042 U | 0.01 UJ | 0.011 UJ | | 0.0052 U | 0.0043 U |
| PEST/PCB | ENDRIN KETONE | MG/KG | 0.0041 U | | | 0.0038 U | 0.0042 U | 0.0036 U | 0.0036 U | 0.0036 U | 0.0036 U | 0.0045 U | 0.0049 U | 0.0038 U | 0.0046 U | 0.0054 U | 0.0096 UJ | 0.0042 U | 0.01 UJ | 0.011 UJ | | 0.0052 U | 0.0043 U |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | 0.0021 U | | | 0.002 U | 0.0022 U | 0.0018 U | 0.0018 U | 0.0019 U | 0.0019 U | 0.0023 U | 0.0025 U | 0.002 U | 0.0024 U | 0.0028 U | 0.0049 UJ | 0.0021 U | 0.0053 UJ | 0.0057 UJ | | 0.0027 U | 0.0022 U |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | 0.0021 U | | | 0.002 U | 0.0022 U | 0.0018 U | 0.0018 U | 0.0019 U | 0.0019 U | 0.0023 U | 0.0025 U | 0.002 U | 0.0024 U | 0.0028 U | 0.0049 UJ | 0.0021 U | 0.0053 UJ | 0.0057 UJ | | 0.0027 U | 0.0022 U |
| PEST/PCB | HEPTACHLOR | MG/KG | 0.0021 U | | | 0.002 U | 0.0022 U | 0.0018 U | 0.0018 U | 0.0019 U | 0.0019 U | 0.0023 U | 0.0025 U | 0.002 U | 0.0024 U | 0.0028 U | 0.0049 UJ | 0.0021 U | 0.0053 UJ | 0.0057 UJ | | 0.0027 U | 0.0022 U |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | 0.0021 U | | | 0.002 U | 0.0022 U | 0.0018 U | 0.0018 U | 0.0019 U | 0.0019 U | 0.0023 U | 0.0025 U | 0.002 U | 0.0024 U | 0.0028 U | 0.0049 UJ | 0.0021 U | 0.0053 UJ | 0.0057 UJ | | 0.0027 U | 0.0022 U |
| PEST/PCB | METHOXYCHLOR | MG/KG | 0.021 U | | | 0.02 U | 0.022 U | 0.018 U | 0.018 U | 0.019 U | 0.019 U | 0.023 U | 0.025 U | 0.02 U | 0.024 U | 0.028 U | 0.049 UJ | 0.021 U | 0.053 UJ | 0.057 UJ | | 0.027 U | 0.022 U |
| PEST/PCB | TOXAPHENE | MG/KG | 0.21 U | | | 0.2 U | 0.22 U | 0.18 U | 0.18 U | 0.19 U | 0.19 U | 0.23 U | 0.25 U | 0.2 U | 0.24 U | 0.28 U | 0.49 UJ | 0.21 U | 0.53 UJ | 0.57 UJ | | 0.27 U | 0.22 U |
| SVOC | 1,1'-BIPHENYL | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 UJ | 1 UJ | 1.1 UJ | | 0.52 UJ | 0.43 UJ |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | 1 U | | | 0.92 U | 1 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 1.1 U | 1.2 U | 0.93 U | 1.2 U | 1.4 U | 2.4 UJ | 1 U | 2.6 UJ | 2.8 UJ | | 1.3 U | 1.1 U |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | 2,4-DINITROPHENOL | MG/KG | 1 U | | | 0.92 U | 1 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 1.1 U | 1.2 U | 0.93 U | 1.2 U | 1.4 U | 2.4 UJ | 1 U | 2.6 UJ | 2.8 UJ | | 1.3 U | 1.1 U |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | 2-CHLOROPHENOL | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | 2-METHYLPHENOL | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | 2-NITROANILINE | MG/KG | 1 U | | | 0.92 U | 1 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 1.1 U | 1.2 U | 0.93 U | 1.2 U | 1.4 U | 2.4 UJ | 1 U | 2.6 UJ | 2.8 UJ | | 1.3 U | 1.1 U |
| SVOC | 2-NITROPHENOL | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | 3-NITROANILINE | MG/KG | 1 U | | | 0.92 U | 1 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 1.1 U | 1.2 U | 0.93 U | 1.2 U | 1.4 U | 2.4 UJ | 1 U | 2.6 UJ | 2.8 UJ | | 1.3 U | 1.1 U |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | 1 U | | | 0.92 U | 1 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 1.1 U | 1.2 U | 0.93 U | 1.2 U | 1.4 U | 2.4 UJ | 1 U | 2.6 UJ | 2.8 UJ | | 1.3 U | 1.1 U |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | 4-CHLOROANILINE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | 4-METHYLPHENOL | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | 4-NITROANILINE | MG/KG | 1 U | | | 0.92 U | 1 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 1.1 U | 1.2 U | 0.93 U | 1.2 U | 1.4 U | 2.4 UJ | 1 U | 2.6 UJ | 2.8 UJ | | 1.3 U | 1.1 U |
| SVOC | 4-NITROPHENOL | MG/KG | 1 U | | | 0.92 U | 1 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 1.1 U | 1.2 U | 0.93 U | 1.2 U | 1.4 U | 2.4 UJ | 1 U | 2.6 UJ | 2.8 UJ | | 1.3 U | 1.1 U |
| SVOC | ACENAPHTHENE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | ACENAPHTHYLENE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | ACETOPHENONE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | ANTHRACENE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | ATRAZINE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | BENZALDEHYDE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.012 J | | | 0.015 J | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.02 J | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 0.2 J | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | BENZO(A)PYRENE | MG/KG | 0.018 J | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.027 J | 0.022 J | 0.033 J | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 0.23 J | 0.12 J | | 0.52 U | 0.43 U |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 0.03 J | | | 0.019 J | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.028 J | 0.015 J | 0.04 J | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 0.32 J | 0.18 J | | 0.054 J | 0.43 U |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | BWSB0001 | BWSB0001 | BWSB0001 | BWSB0002 | BWSB0003 | BWSB0004 | BWSB0004 | BWSB0005 | BWSB0006 | BWSB0007 | BWSB0008 | BWSB0009 | BWSB0011 | BWSB0012 | BWSB0013 | BWSB0014 | BWSB0015 | BWSB0016 | BWSB0016 | BWSB0017 | BWSB0018 |
| | | Field Sample ID | BWSB0001-SS-AA-AE-0 | BWSB0001-SS-AD-AE-0 | BWSB0001-SS-AD-AE-1 | BWSB0002-SS-AA-AD-0 | BWSB0003-SS-AA-AD-0 | BWSB0004-SS-AA-AE-0 | BWSB0004-SS-AA-AE-1 | BWSB0005-SS-AA-AE-0 | BWSB0006-SS-AA-AD-0 | BWSB0007-SS-AA-AE-0 | BWSB0008-SS-AA-AB-0 | BWSB0009-SS-AA-AE-0 | BWSB0011-SS-AA-AB-0 | BWSB0012-SS-AA-AB-0 | BWSB0013-SS-AA-AB-0 | BWSB0014-SS-AA-AB-0 | BWSB0015-SS-AA-AB-0 | BWSB0016-SS-AA-AB-0 | BWSB0016-SS-AD-AE-0 | BWSB0017-SS-AA-AB-0 | BWSB0018-SS-AA-AB-0 |
| | | Sample Date | 7/18/05 | 12/26/07 | 12/26/07 | 7/18/05 | 7/19/05 | 7/19/05 | 7/19/05 | 7/19/05 | 7/19/05 | 7/19/05 | 7/19/05 | 7/20/05 | 7/21/05 | 7/21/05 | 7/21/05 | 7/21/05 | 7/21/05 | 7/21/05 | 12/19/07 | 7/21/05 | 7/21/05 |
| | | Depth (ft) | 0-2 | 1.5-2 | 1.5-2 | 0-1.5 | 0-1.5 | 0-2 | 0-2 | 0-2 | 0-1.5 | 0-2 | 0-0.5 | 0-2 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 1.5-2 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 0.17 J | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.019 J | | | 0.025 J | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.03 J | 0.016 J | 0.029 J | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 0.1 J | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 U | 0.12 J | | 0.52 U | 0.43 U |
| SVOC | CAPROLACTAM | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 0.12 J | | 0.52 U | 0.052 J |
| SVOC | CARBAZOLE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | CHRYSENE | MG/KG | 0.041 J | | | 0.028 J | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.026 J | 0.49 U | 0.032 J | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 0.27 J | 0.16 J | | 0.52 U | 0.43 U |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | DIBENZOFURAN | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | DIETHYLPHTHALATE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | DIMETHYLPHTHALATE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | FLUORANTHENE | MG/KG | 0.022 J | | | 0.034 J | 0.42 U | 0.36 U | 0.36 U | 0.017 J | 0.36 U | 0.45 U | 0.029 J | 0.026 J | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 0.38 J | 0.24 J | | 0.085 J | 0.43 U |
| SVOC | FLUORENE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | HEXACHLOROBENZENE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | HEXACHLOROETHANE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.022 J | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 0.16 J | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | ISOPHORONE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | NAPHTHALENE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | NITROBENZENE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | PENTACHLOROPHENOL | MG/KG | 1 U | | | 0.92 U | 1 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 1.1 U | 1.2 U | 0.93 U | 1.2 U | 1.4 U | 2.4 UJ | 1 U | 2.6 UJ | 2.8 UJ | | 0.25 J | 0.53 J |
| SVOC | PHENANTHRENE | MG/KG | 0.41 U | | | 0.012 J | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.018 J | 0.012 J | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 0.2 J | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | PHENOL | MG/KG | 0.41 U | | | 0.38 U | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.45 U | 0.49 U | 0.38 U | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 1 UJ | 1.1 UJ | | 0.52 U | 0.43 U |
| SVOC | PYRENE | MG/KG | 0.024 J | | | 0.031 J | 0.42 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.034 J | 0.038 J | 0.042 J | 0.46 U | 0.54 U | 0.96 UJ | 0.42 U | 0.37 J | 0.2 J | | 0.073 J | 0.43 U |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | 0.01 UJ | | | 0.01 UJ | 0.012 U | 0.011 UJ | 0.011 UJ | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | 1,1-DICHLOROETHANE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | 1,1-DICHLOROETHENE | MG/KG | 0.01 U | | | 0.01 U | 0.001 J | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | 0.01 UJ | | | 0.01 UJ | 0.012 UJ | 0.011 UJ | 0.011 UJ | 0.011 UJ | 0.01 UJ | 0.012 UJ | | 0.0096 UJ | | | | | | | | | |
| VOC | 1,2-DIBROMOETHANE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | 1,2-DICHLOROETHANE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | 0.01 UJ | | | 0.01 UJ | 0.012 U | 0.011 UJ | 0.011 UJ | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | 0.01 UJ | | | 0.01 UJ | 0.012 UJ | 0.011 UJ | 0.011 UJ | 0.011 UJ | 0.01 UJ | 0.012 UJ | | 0.0096 UJ | | | | | | | | | |
| VOC | ACETONE | MG/KG | 0.01 U | | | 0.012 | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | BENZENE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | BROMOFORM | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | BROMOMETHANE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | CARBON DISULFIDE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | CARBON TETRACHLORIDE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | CHLOROBENZENE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | CHLOROETHANE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | CHLOROFORM | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | CHLOROMETHANE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | CYCLOHEXANE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | 0.01 UJ | | | 0.01 UJ | 0.012 UJ | 0.011 UJ | 0.011 UJ | 0.011 UJ | 0.01 UJ | 0.012 UJ | | 0.0096 UJ | | | | | | | | | |
| VOC | DICHLOROMETHANE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | ETHYLBENZENE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | ISOPROPYLBENZENE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | METHYL ACETATE | MG/KG | 0.01 UJ | | | 0.01 UJ | 0.012 U | 0.011 UJ | 0.011 UJ | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | METHYL ETHYL KETONE | MG/KG | 0.01 UJ | | | 0.01 UJ | 0.012 U | 0.011 UJ | 0.011 UJ | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | METHYLCYCLOHEXANE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | STYRENE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | TETRACHLOROETHENE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | TOLUENE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | VINYL CHLORIDE | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | 0.01 U | | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.011 U | 0.01 U | 0.012 U | | 0.0096 U | | | | | | | | | |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | BWSB0019 | BWSB0020 | BWSB0021 | BWSB0022 | BWSB0023 | BWSB0023 | BWSB0024 | BWSB0025 | BWSB0026 | BWSB0027 | BWSB0028 | BWSB0028 | BWSB0029 | BWSB0030 | BWSB0031 | BWSB0032 | BWSB0033 | BWSB0034 | BWSB0035 | BWSB0036 | BWSB0036 |
| | | Field Sample ID | BWSB0019-SS-AA-AB-0 | BWSB0020-SS-AA-AB-0 | BWSB0021-SS-AA-AB-0 | BWSB0022-SS-AA-AB-0 | BWSB0023-SS-AA-AB-0 | BWSB0023-SS-AA-AB-1 | BWSB0024-SS-AA-AB-0 | BWSB0025-SS-AA-AB-0 | BWSB0026-SS-AA-AB-0 | BWSB0027-SS-AA-AB-0 | BWSB0028-SS-AA-AB-0 | BWSB0028-SS-AA-AB-1 | BWSB0029-SS-AA-AB-0 | BWSB0030-SS-AA-AB-0 | BWSB0031-SS-AA-AB-0 | BWSB0032-SS-AA-AB-0 | BWSB0033-SS-AA-AB-0 | BWSB0034-SS-AA-AB-0 | BWSB0035-SS-AA-AB-0 | BWSB0036-SS-AA-AB-0 | BWSB0036-SS-AA-AB-1 |
| | | Sample Date | 7/21/05 | 8/8/05 | 8/8/05 | 12/19/07 | 12/19/07 | 12/19/07 | 12/19/07 | 12/26/07 | 12/26/07 | 12/26/07 | 12/27/07 | 12/27/07 | 12/27/07 | 12/27/07 | 12/27/07 | 12/27/07 | 12/27/07 | 12/27/07 | 12/27/07 | 1/2/08 | 1/2/08 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 1910 J | 1720 | 798 | 1310 J | 1270 J | 1250 J | 1640 J | 1870 | 1790 | 1410 | 2180 | 2140 | 4190 | 652 | 4490 | 550 | 2860 | 4270 | 472 | 1030 | 1000 |
| METALS | ANTIMONY | MG/KG | 0.86 UJ | 0.53 UJ | 0.52 UJ | 0.74 UJ | 0.74 UJ | 0.78 UJ | 0.73 UJ | 0.77 UJ | 0.78 UJ | 0.75 UJ | 0.78 UJ | 0.75 UJ | 0.77 UJ | 0.71 UJ | 0.8 UJ | 0.7 UJ | 0.82 UJ | 0.78 UJ | 0.82 UJ | 0.75 UJ | 0.73 UJ |
| METALS | ARSENIC | MG/KG | 1.8 J | 1.4 J | 0.79 J | 3.8 | 3.7 | 3.7 | 2.1 J | 5.1 | 5.3 | 5.5 | 3.5 | 3.2 | 3.7 | 0.67 U | 6.3 | 1.3 J | 6.8 | 4.4 | 1.6 J | 2 J | 1.1 J |
| METALS | BARIUM | MG/KG | 8.3 J | 19.1 J | 4.1 J | 14.5 J | 11.9 J | 12 J | 7.6 J | 11.4 J | 11.6 J | 9.1 J | 6.3 J | 6.1 J | 3.8 J | 2.7 J | 22.8 J | 2.9 J | 10.2 J | 8.2 J | 9.4 J | 6.6 J | 6.8 J |
| METALS | BERYLLIUM | MG/KG | 0.19 J | 0.086 J | 0.11 J | 0.04 U | 0.06 J | 0.07 J | 0.07 J | 0.05 U | 0.05 J | 0.05 U | 0.05 J | 0.05 U | 0.07 J | 0.04 U | 0.08 J | 0.04 U | 0.05 J | 0.07 J | 0.05 U | 0.05 U | 0.04 U |
| METALS | CADMIUM | MG/KG | 0.094 J | 0.053 U | 0.052 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.14 J | 0.09 U | 0.1 J | 0.1 U | 0.09 U | 0.09 U | 0.09 U | 0.1 U | 0.08 U | 0.1 U | 0.09 U | 0.1 U | 0.09 U | 0.09 U |
| METALS | CALCIUM | MG/KG | 79.3 J | 415 J | 123 J | 191 J | 59.4 J | 56.5 J | 280 J | 410 J | 445 J | 504 J | 67.7 J | 63 J | 33.8 J | 28.6 J | 59.5 J | 84.1 J | 63.4 J | 56.4 J | 50 J | 140 J | 121 J |
| METALS | CHROMIUM | MG/KG | 5.1 J | 5.3 | 7.6 | 5.4 | 4.3 | 4.5 | 6.7 | 6.9 | 7 | 6.1 | 6.2 J | 7.7 J | 8.6 J | 2.9 | 13 J | 2.1 J | 7.9 J | 9.1 J | 4.6 | 6 J | 6.3 J |
| METALS | COBALT | MG/KG | 1 J | 0.58 J | 0.26 J | 0.51 U | 0.51 U | 0.54 U | 0.51 U | 0.54 U | 0.54 U | 0.52 U | 0.55 U | 0.52 U | 0.54 U | 0.5 U | 0.56 U | 0.48 U | 0.57 U | 0.54 U | 0.57 U | 0.53 U | 0.51 U |
| METALS | COPPER | MG/KG | 6.3 J | 1.9 J | 2.2 J | 4 J | 4.4 J | 4.4 J | 4.4 J | 8.6 | 9.3 | 8.3 | 3 J | 3.2 J | 4 J | 2.1 J | 4.8 J | 1.2 J | 12.4 | 4.7 J | 1.1 J | 1.8 J | 1.5 J |
| METALS | CYANIDE | MG/KG | 0.32 J | 0.086 J | 0.15 J | 0.03 U | 0.04 U | 0.09 J | 0.03 U | 0.2 J | 0.04 U | 0.04 U | 0.14 J | 0.04 U | 0.04 U | 0.03 U | 0.04 U | 0.03 U | 0.04 U | 0.04 U | 0.04 U | 0.03 U | 0.03 U |
| METALS | IRON | MG/KG | R | 2080 | 2530 | 2750 | 2330 | 2340 | 4210 | 2890 | 2180 | 1920 | 4540 | 4500 | 6200 | 1460 | 8490 | 1130 | 5990 | 7140 | 2370 | 3000 | 2960 |
| METALS | LEAD | MG/KG | 80.8 J | 12 | 23.9 | 49.8 | 31.1 | 35.5 | 27.8 | 28.2 | 33.7 | 23.1 | 41.1 | 41.2 | 53.3 | 35 | 76.4 | 18.1 | 122 | 105 | 9.9 | 17.4 J | 15.6 J |
| METALS | MAGNESIUM | MG/KG | 39.3 J | 56.1 J | 29.5 J | 71.6 J | 54.4 J | 54 J | 107 J | 138 J | 120 J | 107 J | 61.9 J | 62.2 J | 101 J | 54.7 J | 77.5 J | 36.4 J | 68.5 J | 94.3 J | 38.4 J | 59.4 J | 59 J |
| METALS | MANGANESE | MG/KG | 12.1 J | 9.5 | 3.2 J | 7 | 3.1 J | 3.2 J | 16.1 | 11.5 | 6.3 | 9.4 | 6.1 | 6.1 | 7.6 | 4.9 | 8 | 5.6 | 13.5 | 6.5 | 4.4 | 6.5 | 6.4 |
| METALS | MERCURY | MG/KG | 0.13 J | 0.039 J | 0.037 J | 0.05 U | 0.05 U | 0.05 U | 0.04 U | 0.1 | 0.06 U | 0.05 U | 0.06 U | 0.07 J | 0.06 U | 0.05 U | 0.09 J | 0.06 U | 0.06 J | 0.05 U | 0.06 U | 0.05 U | 0.05 U |
| METALS | NICKEL | MG/KG | 0.56 J | 0.48 J | 0.3 J | 0.99 J | 0.9 J | 1 J | 1.2 J | 0.66 J | 0.62 J | 0.68 J | 0.94 J | 1 J | 2.6 J | 0.98 J | 2.1 J | 0.52 J | 1.2 J | 1.9 J | 0.39 J | 0.69 J | 0.71 J |
| METALS | POTASSIUM | MG/KG | 87.6 J | 115 J | 77.1 J | 58.3 J | 47 J | 41.5 J | 68.1 J | 128 J | 112 J | 119 J | 110 J | 98.7 J | 139 J | 81.9 J | 149 J | 61.7 J | 141 J | 176 J | 93.1 J | 120 J | 124 J |
| METALS | SELENIUM | MG/KG | 1.4 J | 0.57 J | 0.47 U | 1 U | 1 U | 1.1 UJ | 1 U | 1.1 U | 1.1 U | 1 U | 1.1 UJ | 1 UJ | 1 UJ | 0.97 UJ | 1.1 UJ | 0.95 UJ | 1.1 UJ | 1.1 UJ | 1.1 UJ | 1 U | 1 U |
| METALS | SILVER | MG/KG | 0.1 UJ | 0.1 J | 0.062 U | 0.2 U | 0.2 U | 0.21 U | 0.2 U | 0.21 U | 0.21 U | 0.2 U | 0.21 U | 0.2 U | 0.21 U | 0.19 U | 0.22 U | 0.19 U | 0.22 U | 0.21 U | 0.22 U | 0.21 U | 0.2 U |
| METALS | SODIUM | MG/KG | 35.9 UJ | 22.4 U | 22 U | 28.1 U | 34.6 J | 32.3 J | 56.6 J | 29.4 U | 29.6 U | 28.7 U | 29.9 U | 28.5 U | 29.3 U | 27.3 U | 31 J | 26.5 U | 31.2 U | 29.6 U | 31.2 U | 28.8 U | 27.9 U |
| METALS | THALLIUM | MG/KG | 0.76 J | 0.83 J | 0.37 U | 1.1 U | 1.1 U | 1.2 U | 1.1 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.1 U | 1.2 U | 1.1 U | 1.3 U | 1.2 U | 1.3 U | 1.2 U | 1.1 U |
| METALS | VANADIUM | MG/KG | 5.1 J | 5.5 J | 4.4 J | 5.1 J | 4.7 J | 4.6 J | 7.4 J | 5.4 J | 5 J | 4.2 J | 11.1 J | 11.4 | 13.9 | 4.9 J | 20.4 | 4.6 J | 13 | 15.1 | 4.4 J | 8.3 J | 7.8 J |
| METALS | ZINC | MG/KG | 5 J | 3.5 J | 4.2 J | R | R | R | R | 20.5 | 15.3 | 18.6 | 5.6 J | 5.6 J | 6 J | 4.1 J | 9.6 J | 3.8 J | 11.1 J | 12 J | 3.7 J | 2.4 J | 2.3 J |
| PEST/PCB | 4,4'-DDD | MG/KG | 0.0067 UJ | 0.0042 UJ | 0.0041 UJ | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDE | MG/KG | 0.0067 UJ | 0.0042 UJ | 0.0041 UJ | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDT | MG/KG | 0.0067 UJ | 0.0042 UJ | 0.0041 UJ | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALDRIN | MG/KG | 0.0035 UJ | 0.0022 UJ | 0.0021 UJ | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-BHC | MG/KG | 0.0035 UJ | 0.0022 UJ | 0.0021 UJ | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | 0.0035 UJ | 0.0022 UJ | 0.0021 UJ | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1016 | MG/KG | 0.067 UJ | 0.042 UJ | 0.041 UJ | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1221 | MG/KG | 0.14 UJ | 0.085 UJ | 0.084 UJ | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1232 | MG/KG | 0.067 UJ | 0.042 UJ | 0.041 UJ | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1242 | MG/KG | 0.067 UJ | 0.042 UJ | 0.041 UJ | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1248 | MG/KG | 0.067 UJ | 0.042 UJ | 0.041 UJ | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1254 | MG/KG | 0.067 UJ | 0.042 UJ | 0.041 UJ | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1260 | MG/KG | 0.067 UJ | 0.042 UJ | 0.041 UJ | | | | | | | | | | | | | | | | | | |
| PEST/PCB | BETA-BHC | MG/KG | 0.0035 UJ | 0.0022 UJ | 0.0021 UJ | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DELTA-BHC | MG/KG | 0.0035 UJ | 0.0022 UJ | 0.0021 UJ | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DIELDRIN | MG/KG | 0.0067 UJ | 0.0042 UJ | 0.0041 UJ | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN I | MG/KG | 0.0035 UJ | 0.0022 UJ | 0.0021 UJ | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN II | MG/KG | 0.0067 UJ | 0.0042 UJ | 0.0041 UJ | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | 0.0067 UJ | 0.0042 UJ | 0.0041 UJ | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN | MG/KG | 0.0067 UJ | 0.0042 UJ | 0.0041 UJ | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | 0.0067 UJ | 0.0042 UJ | 0.0041 UJ | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN KETONE | MG/KG | 0.0067 UJ | 0.0042 UJ | 0.0041 UJ | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | 0.0035 UJ | 0.0022 UJ | 0.0021 UJ | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | 0.0035 UJ | 0.0022 UJ | 0.0021 UJ | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR | MG/KG | 0.0035 UJ | 0.0022 UJ | 0.0021 UJ | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | 0.0035 UJ | 0.0022 UJ | 0.0021 UJ | | | | | | | | | | | | | | | | | | |
| PEST/PCB | METHOXYCHLOR | MG/KG | 0.035 UJ | 0.022 UJ | 0.021 UJ | | | | | | | | | | | | | | | | | | |
| PEST/PCB | TOXAPHENE | MG/KG | 0.35 UJ | 0.22 UJ | 0.21 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | 1,1'-BIPHENYL | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | 1.7 UJ | 1.1 UJ | 1 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROPHENOL | MG/KG | 1.7 UJ | 1.1 UJ | 1 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLOROPHENOL | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLPHENOL | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROANILINE | MG/KG | 1.7 UJ | 1.1 UJ | 1 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROPHENOL | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | 3-NITROANILINE | MG/KG | 1.7 UJ | 1.1 UJ | 1 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | 1.7 UJ | 1.1 UJ | 1 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROANILINE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | 4-METHYLPHENOL | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROANILINE | MG/KG | 1.7 UJ | 1.1 UJ | 1 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROPHENOL | MG/KG | 1.7 UJ | 1.1 UJ | 1 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | ACENAPHTHENE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | ACENAPHTHYLENE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | ACETOPHENONE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | ANTHRACENE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | ATRAZINE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | BENZALDEHYDE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(A)PYRENE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | BWSB0019 | BWSB0020 | BWSB0021 | BWSB0022 | BWSB0023 | BWSB0023 | BWSB0024 | BWSB0025 | BWSB0026 | BWSB0027 | BWSB0028 | BWSB0028 | BWSB0029 | BWSB0030 | BWSB0031 | BWSB0032 | BWSB0033 | BWSB0034 | BWSB0035 | BWSB0036 | BWSB0036 |
| | | Field Sample ID | BWSB0019-SS-AA-AB-0 | BWSB0020-SS-AA-AB-0 | BWSB0021-SS-AA-AB-0 | BWSB0022-SS-AA-AB-0 | BWSB0023-SS-AA-AB-0 | BWSB0023-SS-AA-AB-1 | BWSB0024-SS-AA-AB-0 | BWSB0025-SS-AA-AB-0 | BWSB0026-SS-AA-AB-0 | BWSB0027-SS-AA-AB-0 | BWSB0028-SS-AA-AB-0 | BWSB0028-SS-AA-AB-1 | BWSB0029-SS-AA-AB-0 | BWSB0030-SS-AA-AB-0 | BWSB0031-SS-AA-AB-0 | BWSB0032-SS-AA-AB-0 | BWSB0033-SS-AA-AB-0 | BWSB0034-SS-AA-AB-0 | BWSB0035-SS-AA-AB-0 | BWSB0036-SS-AA-AB-0 | BWSB0036-SS-AA-AB-1 |
| | | Sample Date | 7/21/05 | 8/8/05 | 8/8/05 | 12/19/07 | 12/19/07 | 12/19/07 | 12/19/07 | 12/26/07 | 12/26/07 | 12/26/07 | 12/27/07 | 12/27/07 | 12/27/07 | 12/27/07 | 12/27/07 | 12/27/07 | 12/27/07 | 12/27/07 | 12/27/07 | 1/2/08 | 1/2/08 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | CAPROLACTAM | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | CARBAZOLE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | CHRYSENE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | DIBENZOFURAN | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | DIETHYLPHTHALATE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | DIMETHYLPHTHALATE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | FLUORANTHENE | MG/KG | 0.093 J | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | FLUORENE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROBENZENE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROETHANE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | ISOPHORONE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | NAPHTHALENE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | NITROBENZENE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | PENTACHLOROPHENOL | MG/KG | 1.7 UJ | 1.1 UJ | 1 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | PHENANTHRENE | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | PHENOL | MG/KG | 0.67 UJ | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| SVOC | PYRENE | MG/KG | 0.075 J | 0.42 UJ | 0.41 UJ | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMOETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | ACETONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOFORM | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON DISULFIDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON TETRACHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROFORM | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | ETHYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | ISOPROPYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ACETATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ETHYL KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYLCYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | STYRENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TETRACHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | VINYL CHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | | | | | | | | | | | | | | | | | | | | | |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | BWSB0037 | BWSB0038 | BWSB0039 | BWSB0040 | BWSB0041 | BWSB0042 | BWSB0045 | BWSB0046 | BWSB0047 | BWSB0048 | BWSB0049 | BWSB0050 | BWSB0050 | BWSB0051 | BWSB0051 | BWSB0052 | BWSB0053 | BWSB0054 | BWSB0057 | BWSB0060 | BWSB0061 |
| | | Field Sample ID | BWSB0037-SS-AA-AB-0 | BWSB0038-SS-AA-AB-0 | BWSB0039-SS-AA-AB-0 | BWSB0040-SS-AA-AB-0 | BWSB0041-SS-AA-AB-0 | BWSB0042-SS-AA-AB-0 | BWSB0045-SS-AA-AB-0 | BWSB0046-SS-AA-AB-0 | BWSB0047-SS-AA-AB-0 | BWSB0048-SS-AA-AB-0 | BWSB0049-SS-AA-AB-0 | BWSB0050-SS-AA-AB-0 | BWSB0050-SS-AA-AB-1 | BWSB0051-SS-AA-AB-0 | BWSB0051-SS-AA-AB-1 | BWSB0052-SS-AA-AB-0 | BWSB0053-SS-AA-AB-0 | BWSB0054-SS-AA-AB-0 | BWSB0057-SS-AA-AB-0 | BWSB0060-SS-AA-AB-0 | BWSB0061-SS-AA-AB-0 |
| | | Sample Date | 1/2/08 | 1/2/08 | 1/2/08 | 1/2/08 | 1/4/08 | 1/4/08 | 1/4/08 | 1/4/08 | 1/7/08 | 1/7/08 | 1/7/08 | 1/7/08 | 1/7/08 | 1/7/08 | 1/7/08 | 1/7/08 | 1/7/08 | 1/7/08 | 5/18/11 | 5/19/11 | 5/19/11 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 1860 | 1260 | 4090 J | 798 | 8310 J | 7910 | 2400 J | 1190 | 1330 J | 863 J | 874 J | 523 | 265 | 803 | 642 | 3220 J | 6210 J | 1860 J | 9400 J | 819 | 2000 J |
| METALS | ANTIMONY | MG/KG | 0.87 UJ | 0.74 UJ | 1.3 UJ | 0.78 UJ | 2 UJ | 2.9 J | 1.4 UJ | 0.89 UJ | 2.2 J | 1.6 UJ | 1.4 UJ | 0.89 U | 0.89 U | 0.89 J | 0.9 U | 4.2 J | 13.3 J | 3.8 UJ | 2.2 J | 7.1 UJ | 10.2 UJ |
| METALS | ARSENIC | MG/KG | 3.7 J | 2.5 J | 57.5 J | 0.74 UJ | 30.9 J | 43.3 J | 8.4 J | 2.2 J | 2.5 J | 2.9 J | 3.6 J | 1.1 J | 0.83 U | 1.4 J | 0.98 J | 2.3 J | 27.2 J | 4.1 J | 13 J | 2 | 13 J |
| METALS | BARIUM | MG/KG | 5.4 J | 5.5 J | 247 J | 9 J | 190 J | 542 | 44.7 J | 11.5 J | 59.1 J | 49.9 J | 44.7 J | 11.1 J | 4.9 J | 5.4 J | 4.5 J | 14.1 J | 197 J | 85.4 J | 249 J | 8.6 J | 21.6 J |
| METALS | BERYLLIUM | MG/KG | 0.05 U | 0.04 U | 0.31 J | 0.05 U | 0.39 J | 0.3 J | 0.09 UJ | 0.05 U | 0.12 UJ | 0.09 UJ | 0.08 UJ | 0.05 U | 0.05 U | 0.05 U | 0.05 U | 0.13 UJ | 1.6 J | 0.23 UJ | 0.21 J | 0.59 U | 0.19 J |
| METALS | CADMIUM | MG/KG | 0.11 U | 0.09 U | 1.4 J | 0.1 U | 1.6 J | 0.16 J | 0.17 UJ | 0.11 U | 0.24 UJ | 0.19 UJ | 0.27 J | 0.13 J | 0.11 U | 0.11 U | 0.11 U | 0.27 J | 6.4 J | 0.78 J | 2.3 J | 0.59 U | 0.85 UJ |
| METALS | CALCIUM | MG/KG | 72.2 J | 55.2 J | 889 J | 117 J | 4590 J | 1290 J | 257 J | 60.8 J | 703 J | 497 J | 300 J | 123 J | 51.1 J | 45.6 J | 51 J | 69.6 J | 6940 J | 9070 J | 4160 J | 1100 | 3220 J |
| METALS | CHROMIUM | MG/KG | 9.2 J | 7.3 J | 33.7 J | 4.4 | 69.2 J | 46.9 J | 12.8 J | 5.5 | 5.9 J | 2.8 J | 3.1 J | 1.1 J | 0.77 J | 1.7 J | 1.9 J | 4 J | 11.7 J | 4 J | 53.3 J | R | R |
| METALS | COBALT | MG/KG | 0.61 U | 0.52 U | 1.1 J | 0.55 U | 1.4 UJ | 2.6 J | 0.99 UJ | 0.62 U | 1.4 UJ | 1.1 UJ | 0.97 UJ | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 1.5 UJ | 4.2 J | 2.6 UJ | 2.4 J | 0.46 J | 0.74 J |
| METALS | COPPER | MG/KG | 3.2 J | 7.4 | 21.6 J | 1.5 J | 46.3 J | 34.1 | 9 J | 1 J | 8 J | 4.5 J | 4.1 J | 1 J | 0.43 J | 4 J | 2.1 J | 14.3 J | 37.1 J | 10.7 J | 56.2 J | R | R |
| METALS | CYANIDE | MG/KG | 0.04 U | 0.03 U | 3.5 J | 0.04 U | 1.4 J | 1.4 | 1.4 J | 0.86 | 0.09 UJ | 0.07 UJ | 0.07 UJ | 0.04 U | 0.04 U | 0.04 U | 0.04 U | 0.1 UJ | 0.19 UJ | 0.18 UJ | | | |
| METALS | IRON | MG/KG | 5630 | 5880 | 13700 J | 2250 | 16300 J | 26400 | 11000 J | 3520 | 2830 J | 1200 J | 849 J | 447 | 242 | 1130 | 1630 | 549 J | 9030 J | 4160 J | 21100 J | 1380 | 3880 J |
| METALS | LEAD | MG/KG | 19.1 J | 31.4 J | 340 J | 11.4 J | 919 J | 523 | 112 J | 39.6 | 139 J | 82.4 J | 93.1 J | 14.8 | 8.9 | 57 | 36.3 | 171 J | 857 J | 354 J | 658 JD | 11.6 J | 80.3 JD |
| METALS | MAGNESIUM | MG/KG | 59.5 J | 60.3 J | 249 J | 49.6 J | 440 J | 318 J | 156 J | 42.8 J | 113 J | 66.4 J | 41.8 J | 24.3 J | 14.5 U | 20.6 J | 23.8 J | 36.7 J | 364 J | 283 J | 608 J | 33 J | 76.9 J |
| METALS | MANGANESE | MG/KG | 5 | 3.9 | 17.4 J | 4.1 | 33.3 J | 26.1 J | 5.2 J | 2.7 J | 9.2 J | 6.8 J | 6 J | 3.9 J | 5.3 | 5.9 | 5 | 3.3 J | 17.3 J | 15.3 J | 33.7 J | 3.8 J | 5.3 J |
| METALS | MERCURY | MG/KG | 0.07 U | 0.06 U | 0.14 J | 0.05 U | 0.33 J | 0.48 | 0.3 J | 0.06 U | 0.15 UJ | 0.1 UJ | 0.09 UJ | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.13 UJ | 0.4 J | 0.24 UJ | 0.74 J | 0.022 J | 0.21 UJ |
| METALS | NICKEL | MG/KG | 0.71 J | 0.69 J | 5.1 J | 0.34 J | 5.2 J | 6.7 J | 0.76 J | 0.24 U | 2.1 J | 1.6 J | 1.1 J | 0.56 J | 0.44 J | 0.47 J | 0.71 J | 1.8 J | 14.9 J | 5.9 J | 8.7 J | 0.76 J | 2.2 J |
| METALS | POTASSIUM | MG/KG | 157 J | 123 J | 190 J | 110 J | 254 J | 232 J | 299 J | 82 J | 232 J | 34.6 UJ | 38.5 J | 19.9 U | 19.7 U | 19.9 U | 21.6 J | 47.1 UJ | 87.3 UJ | 84 UJ | 400 J | 93 J | 117 J |
| METALS | SELENIUM | MG/KG | 1.2 UJ | 1 U | 1.8 UJ | 1.1 U | 2.7 UJ | 1.6 U | 1.9 UJ | 1.2 U | 2.7 UJ | 2.1 UJ | 1.9 UJ | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 2.9 UJ | 5.3 UJ | 5.1 UJ | 7.7 UJ | 4.1 U | 0.57 J |
| METALS | SILVER | MG/KG | 0.24 U | 0.2 U | 0.37 UJ | 0.21 U | 0.54 UJ | 0.31 U | 0.39 UJ | 0.24 U | 0.54 UJ | 0.42 UJ | 0.38 UJ | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.58 UJ | 1.1 UJ | 1 UJ | 2.2 UJ | 1.2 U | 1.7 UJ |
| METALS | SODIUM | MG/KG | 33.2 U | 28.3 U | 208 J | 29.9 U | 111 J | 453 J | 55.1 J | 34 U | 85.4 J | 76.9 J | 52.9 UJ | 34 U | 33.8 U | 43.9 J | 48.9 J | 80.7 UJ | 149 UJ | 144 UJ | 310 J | 11.1 J | 26.4 J |
| METALS | THALLIUM | MG/KG | 1.3 U | 1.1 U | 2.1 UJ | 1.2 U | 3.1 UJ | 1.8 U | 2.2 UJ | 1.4 U | 3.1 UJ | 2.4 UJ | 2.1 UJ | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 3.3 UJ | 6.1 UJ | 5.8 UJ | 5.5 UJ | 3 U | 4.2 UJ |
| METALS | VANADIUM | MG/KG | 14 | 10.7 J | 13.9 J | 6.9 J | 30.9 J | 34.7 | 14.6 J | 6.7 J | 5.5 J | 3.8 J | 3.7 J | 1.5 J | 1.2 J | 2.4 J | 1.8 J | 8.8 J | 27.9 J | 7.6 J | 39.6 J | 2.2 J | 6 J |
| METALS | ZINC | MG/KG | 13.3 J | 6 J | 165 J | 7.1 J | 292 J | 322 | 17.4 J | 2.7 J | 14.8 J | 12.7 J | 13.2 J | 4.9 J | 1.6 J | 1.8 J | 2.3 J | 8.2 J | 275 J | 80.2 J | 533 JD | 7.6 | 17.9 J |
| PEST/PCB | 4,4'-DDD | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDT | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1016 | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1221 | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1232 | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1242 | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1248 | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1254 | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1260 | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | BETA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DELTA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DIELDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN I | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN II | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | METHOXYCHLOR | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | TOXAPHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 1,1'-BIPHENYL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | ACENAPHTHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | ACENAPHTHYLENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | ACETOPHENONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | ANTHRACENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | ATRAZINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(A)PYRENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | BWSB0037 | BWSB0038 | BWSB0039 | BWSB0040 | BWSB0041 | BWSB0042 | BWSB0045 | BWSB0046 | BWSB0047 | BWSB0048 | BWSB0049 | BWSB0050 | BWSB0050 | BWSB0051 | BWSB0051 | BWSB0052 | BWSB0053 | BWSB0054 | BWSB0057 | BWSB0060 | BWSB0061 |
| | | Field Sample ID | BWSB0037-SS-AA-AB-0 | BWSB0038-SS-AA-AB-0 | BWSB0039-SS-AA-AB-0 | BWSB0040-SS-AA-AB-0 | BWSB0041-SS-AA-AB-0 | BWSB0042-SS-AA-AB-0 | BWSB0045-SS-AA-AB-0 | BWSB0046-SS-AA-AB-0 | BWSB0047-SS-AA-AB-0 | BWSB0048-SS-AA-AB-0 | BWSB0049-SS-AA-AB-0 | BWSB0050-SS-AA-AB-0 | BWSB0050-SS-AA-AB-1 | BWSB0051-SS-AA-AB-0 | BWSB0051-SS-AA-AB-1 | BWSB0052-SS-AA-AB-0 | BWSB0053-SS-AA-AB-0 | BWSB0054-SS-AA-AB-0 | BWSB0057-SS-AA-AB-0 | BWSB0060-SS-AA-AB-0 | BWSB0061-SS-AA-AB-0 |
| | | Sample Date | 1/2/08 | 1/2/08 | 1/2/08 | 1/2/08 | 1/4/08 | 1/4/08 | 1/4/08 | 1/4/08 | 1/7/08 | 1/7/08 | 1/7/08 | 1/7/08 | 1/7/08 | 1/7/08 | 1/7/08 | 1/7/08 | 1/7/08 | 1/7/08 | 5/18/11 | 5/19/11 | 5/19/11 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | CAPROLACTAM | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | CARBAZOLE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | CHRYSENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIBENZOFURAN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIMETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | FLUORANTHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | FLUORENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | ISOPHORONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | NAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | NITROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PENTACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PHENANTHRENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PYRENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMOETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | ACETONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOFORM | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON DISULFIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON TETRACHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROFORM | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | ETHYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | ISOPROPYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ACETATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ETHYL KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYLCYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | STYRENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TETRACHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | VINYL CHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | | | | | | | | | | | | | | | | | | | | |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | BWL | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | BWSB0062 | HCSB0001 | HCSB0001 | HCSB0002 | HCSB0002 | HCSB0002 | HCSB0003 | HCSB0003 | HCSB0003 | HCSB0004 | HCSB0004 | HCSB0004 | HCSB0005 | HCSB0005 | HCSB0005 | HCSB0006 | HCSB0006 | HCSB0006 | HCSB0007 | HCSB0007 | HCSB0008/15 | HCSB0008/15 |
| | | Field Sample ID | BWSB0062-SS-AA-AB-0 | HCSB0001-SS-AA-AB-0 | HCSB0001-SS-AD-AE-0 | HCSB0002-SS-AA-AB-0 | HCSB0002-SS-AD-AE-0 | HCSB0002-SS-AC-AD-0 | HCSB0003-SS-AA-AB-0 | HCSB0003-SS-AD-AE-0 | HCSB0003-SS-AC-AD-0 | HCSB0004-SS-AA-AB-0 | HCSB0004-SS-AD-AE-0 | HCSB0004-SS-AC-AD-0 | HCSB0005-SS-AA-AB-0 | HCSB0005-SS-AD-AE-0 | HCSB0006-SS-AA-AB-0 | HCSB0006-SS-AA-AB-1 | HCSB0006-SS-AD-AE-0 | HCSB0007-SS-AA-AB-0 | HCSB0007-SS-AD-AE-0 | HCSB0008-SS-AA-AB-0 | HCSB0015-SS-AA-AB-0 |
| | | Sample Date | 5/19/11 | 6/1/05 | 6/1/05 | 6/1/05 | 6/1/05 | 6/6/05 | 6/1/05 | 6/1/05 | 6/6/05 | 6/2/05 | 6/2/05 | 6/6/05 | 6/2/05 | 6/2/05 | 6/2/05 | 6/2/05 | 6/2/05 | 6/2/05 | 6/2/05 | 6/2/05 | 6/2/05 | 6/6/05 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 1.5-2 | 0-0.5 | 1.5-2 | 1-1.5 | 0-0.5 | 1.5-2 | 1-1.5 | 0-0.5 | 1.5-2 | 1-1.5 | 0-0.5 | 1.5-2 | 0-0.5 | 0-0.5 | 1.5-2 | 0-0.5 | 1.5-2 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 1820 J | 1270 | 1330 | 1300 | 1800 | | 2470 | 3680 | | 1340 | 1110 | | 7670 J | 770 | 1590 J | 3870 J | 592 | 10100 | 5200 | 3960 | 3850 |
| METALS | ANTIMONY | MG/KG | 1.3 J | 1 UJ | 1.1 UJ | 0.93 UJ | 0.91 UJ | | 1.1 UJ | 1.6 UJ | | 0.97 J | 0.99 J | | 6.9 J | 1.4 J | 8 J | 25.9 J | 1.1 J | 1.8 J | 1.5 J | 2.2 J | 1.8 J |
| METALS | ARSENIC | MG/KG | 4.7 J | 55.8 | 14.1 J | 21.7 | 158 J | | 20.5 | 28.2 J | | 10.5 | 9.7 | | 100 J | 7.7 | 31.7 J | 105 J | 6.3 | 6.6 | 6 | 5.3 | 7.2 |
| METALS | BARIUM | MG/KG | 41.6 J | 12.5 J | 15.3 J | 8.4 J | 28.9 J | | 14.3 J | 98 | | 3.3 | 14.9 | | 74.8 J | 8.5 | 90.8 J | 219 J | 22.3 | 356 | 201 | 142 | 166 |
| METALS | BERYLLIUM | MG/KG | 0.27 J | 0.07 U | 0.1 U | 0.06 J | 0.08 U | | 0.11 J | 0.14 U | | 0.07 U | 0.09 U | | 0.49 J | 0.12 U | 0.16 J | 0.27 UJ | 0.1 U | 0.77 | 0.48 | 0.28 | 0.31 J |
| METALS | CADMIUM | MG/KG | 1.1 UJ | 0.09 U | 0.55 J | 0.08 U | 0.24 J | | 0.1 U | 1.4 J | | 0.09 U | 0.6 | | 1.1 J | 0.15 U | 0.19 UJ | 0.54 J | 0.13 U | 0.16 | 0.14 U | 0.83 | 1.2 J |
| METALS | CALCIUM | MG/KG | 6550 J | 213 J | 239 J | R | 324 J | | R | 2910 | | R | 298 | | 7640 J | 1990 | 2550 J | 6790 J | 237 | 7110 | 3590 | 7710 | 7490 |
| METALS | CHROMIUM | MG/KG | R | 15.7 | 8.4 J | 8.6 | 50.1 J | | 12.6 | 15.2 J | | 7.9 | 6 | | 180 J | 9.7 | 78.1 J | 407 J | 25.3 | 10.2 | 11.5 | 16.2 | 17.2 J |
| METALS | COBALT | MG/KG | 1.2 J | 0.36 U | 1 J | 0.33 U | 0.5 J | | 0.43 J | 4.5 J | | 0.34 U | 0.56 | | 1.7 UJ | 0.49 U | 0.73 UJ | 1.4 UJ | 0.4 U | 4.5 | 3.7 | 1.8 | 1.8 J |
| METALS | COPPER | MG/KG | R | 15.3 | 10.8 | 8.2 | 36.2 | | 18.9 | 15.3 | | 4.4 | 9.1 | | 55 J | 3.2 | 51.6 J | 237 J | 3.7 | 21.9 | 20.5 | 23.6 | 25.7 |
| METALS | CYANIDE | MG/KG | | 0.08 U | 0.09 U | 0.07 U | 0.07 U | | 0.08 U | 0.12 U | | 0.07 U | 0.08 U | | 0.37 UJ | 0.11 U | 0.16 UJ | 0.31 UJ | 0.76 | 0.11 U | 0.11 U | 0.11 U | 0.11 U |
| METALS | IRON | MG/KG | 4440 J | 3170 | 2960 | 4110 | 4230 | | 5840 | 7520 | | 7670 | 3360 | | 19300 J | 765 | 9340 J | 26600 J | 487 | 5940 | 5560 | 10900 | 11300 |
| METALS | LEAD | MG/KG | 87 JD | 134 | 66.3 | 79 | 320 | | 139 J | 91.4 | | 32.3 | 66.9 | | 470 J | 16.2 | 186 J | 953 J | 114 | 77.3 | 121 | 256 | 304 |
| METALS | MAGNESIUM | MG/KG | 135 J | 57.6 J | 49.1 J | 54.1 J | 69.3 J | | 103 J | 161 J | | 35.2 | 88 | | 423 J | 35.1 | 283 J | 692 J | 39.1 | 892 | 472 | 689 | 585 J |
| METALS | MANGANESE | MG/KG | 4.2 J | 7.1 | 5.5 | 8.8 | 5.3 | | 8.6 | 18.9 | | 4 | 4.3 | | 20 J | 3.8 | 28.4 J | 77.9 J | 3.2 | 183 | 121 | 227 | 200 |
| METALS | MERCURY | MG/KG | 0.26 UJ | 0.06 U | 0.06 U | 0.05 U | 0.06 J | | 0.06 J | 0.11 J | | 0.05 U | 0.05 U | | 0.24 U | 0.08 U | 0.16 | 0.91 | 0.13 | 0.08 U | 0.08 U | 0.19 | 0.28 |
| METALS | NICKEL | MG/KG | 3.5 J | 8.4 J | 2 J | 0.64 J | 1.7 J | | 0.94 J | 9 J | | 0.56 U | R | | R | 0.8 U | R | R | 0.65 U | 11.3 | 8.8 | R | 6.4 J |
| METALS | POTASSIUM | MG/KG | 165 J | R | 60.4 J | R | R | | R | R | | R | R | | 432 J | R | 200 J | 342 J | R | 719 | 507 | 551 | 523 J |
| METALS | SELENIUM | MG/KG | 1.3 J | 1 U | 1.1 U | 0.94 U | 0.93 U | | 1.1 J | 1.6 U | | 0.98 J | 1 U | | 4.8 UJ | 1.4 U | 2.1 UJ | 4 UJ | 1.2 U | 1.5 U | 1.5 U | 1.5 J | 1.5 UJ |
| METALS | SILVER | MG/KG | 2.2 UJ | 0.32 U | 0.37 U | 0.3 U | 0.3 U | | 0.34 U | 0.52 U | | 0.31 U | 0.33 U | | 1.5 UJ | 0.46 U | 0.66 UJ | 1.3 J | 0.38 U | 0.48 U | 0.49 U | 0.46 U | 0.47 U |
| METALS | SODIUM | MG/KG | 34.7 J | 48.9 U | 53.5 U | 45.2 U | 44.3 U | | 51.6 U | 82.7 J | | 47.3 U | 48.1 U | | 232 UJ | 67.4 U | 124 J | 321 J | 54.8 U | 220 | 121 | 70.5 U | 73.5 U |
| METALS | THALLIUM | MG/KG | 5.5 UJ | 0.92 UJ | 1 U | 0.85 UJ | 0.83 U | | 0.97 U | 1.4 U | | 0.89 J | 0.9 U | | 4.4 UJ | 1.3 U | 1.9 UJ | 3.6 UJ | 1 U | 1.4 J | 1.4 J | 1.3 J | 1.4 U |
| METALS | VANADIUM | MG/KG | 6.9 J | 5.4 J | 5.5 J | 6 J | 7.1 J | | 10.7 J | 10.9 J | | 7.1 | 4.7 | | 37.8 J | 2.7 | 7.9 J | 22.5 J | 3 | 25.9 | 21.1 | 17.5 | 20.7 |
| METALS | ZINC | MG/KG | 15.2 J | 11.8 | 60.2 | 9.7 | 23.3 | | 15.4 | 163 | | 5.8 | 42.4 | | 270 J | 10.6 | 103 J | 395 J | 13.1 | 98.9 | 98 | 164 | 182 |
| PEST/PCB | 4,4'-DDD | MG/KG | | R | R | R | R | | R | R | | R | 0.0039 J | | 0.018 UJ | 0.0053 UJ | 0.0077 UJ | 0.015 UJ | 0.0042 UJ | 0.0055 U | 0.0056 U | 0.0055 U | 0.0056 U |
| PEST/PCB | 4,4'-DDE | MG/KG | | R | R | R | R | | R | R | | R | 0.0038 UJ | | 0.018 UJ | 0.0053 UJ | 0.0077 UJ | 0.015 UJ | 0.0042 UJ | 0.0055 U | 0.0056 U | 0.016 J | 0.013 |
| PEST/PCB | 4,4'-DDT | MG/KG | | R | R | R | R | | R | R | | R | 0.0038 UJ | | 0.018 UJ | 0.0053 UJ | 0.0077 UJ | 0.015 UJ | 0.0042 UJ | 0.0055 U | 0.0056 U | 0.031 J | 0.038 J |
| PEST/PCB | ALDRIN | MG/KG | | R | R | R | R | | R | R | | R | 0.002 UJ | | 0.0093 UJ | 0.0027 UJ | 0.004 UJ | 0.0078 UJ | 0.0022 UJ | 0.0028 U | 0.0029 U | 0.0028 U | 0.0029 U |
| PEST/PCB | ALPHA-BHC | MG/KG | | R | R | R | R | | R | R | | R | 0.002 UJ | | 0.0093 UJ | 0.0027 UJ | 0.004 UJ | 0.0078 UJ | 0.0022 UJ | 0.0028 U | 0.0029 U | 0.0028 U | 0.0029 U |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | | R | R | R | R | | R | R | | R | 0.002 UJ | | 0.0093 UJ | 0.0027 UJ | 0.004 UJ | 0.0078 UJ | 0.0022 UJ | 0.0028 U | 0.0029 U | R | R |
| PEST/PCB | AROCLOR-1016 | MG/KG | | R | R | R | R | | R | R | | R | 0.038 UJ | | 0.18 UJ | 0.053 UJ | 0.077 UJ | 0.15 UJ | 0.042 UJ | 0.055 U | 0.056 U | 0.055 U | 0.056 U |
| PEST/PCB | AROCLOR-1221 | MG/KG | | R | R | R | R | | R | R | | R | 0.077 UJ | | 0.37 UJ | 0.11 UJ | 0.16 UJ | 0.3 UJ | 0.085 UJ | 0.11 U | 0.11 U | 0.11 U | 0.11 U |
| PEST/PCB | AROCLOR-1232 | MG/KG | | R | R | R | R | | R | R | | R | 0.038 UJ | | 0.18 UJ | 0.053 UJ | 0.077 UJ | 0.15 UJ | 0.042 UJ | 0.055 U | 0.056 U | 0.055 U | 0.056 U |
| PEST/PCB | AROCLOR-1242 | MG/KG | | R | R | R | R | | R | R | | R | 0.038 UJ | | 0.18 UJ | 0.053 UJ | 0.077 UJ | 0.15 UJ | 0.042 UJ | 0.055 U | 0.056 U | 0.055 U | 0.056 U |
| PEST/PCB | AROCLOR-1248 | MG/KG | | R | R | R | R | | R | R | | R | 0.038 UJ | | 0.18 UJ | 0.053 UJ | 0.077 UJ | 0.15 UJ | 0.042 UJ | 0.055 U | 0.056 U | 0.055 U | 0.056 U |
| PEST/PCB | AROCLOR-1254 | MG/KG | | R | R | R | R | | R | R | | R | 0.038 UJ | | 0.18 UJ | 0.053 UJ | 0.077 UJ | 0.15 UJ | 0.042 UJ | 0.055 U | 0.056 U | 0.055 U | 0.056 U |
| PEST/PCB | AROCLOR-1260 | MG/KG | | R | R | R | R | | R | R | | R | 0.038 UJ | | 0.18 UJ | 0.053 UJ | 0.077 UJ | 0.15 UJ | 0.042 UJ | 0.055 U | 0.056 U | 0.055 U | 0.056 U |
| PEST/PCB | BETA-BHC | MG/KG | | R | R | R | R | | R | R | | R | 0.002 UJ | | 0.0093 UJ | 0.0027 UJ | 0.004 UJ | 0.0078 UJ | 0.0022 UJ | 0.0028 U | 0.0029 U | 0.0028 U | 0.0029 U |
| PEST/PCB | DELTA-BHC | MG/KG | | R | R | R | R | | R | R | | R | 0.002 UJ | | 0.0093 UJ | 0.0027 UJ | 0.004 UJ | 0.0078 UJ | 0.0022 UJ | 0.0028 U | 0.0029 U | 0.0028 U | 0.0029 U |
| PEST/PCB | DIELDRIN | MG/KG | | R | R | R | R | | R | R | | R | 0.0038 UJ | | 0.018 UJ | 0.0053 UJ | 0.0077 UJ | 0.015 UJ | 0.0042 UJ | 0.0055 U | 0.0056 U | 0.0055 U | 0.0056 U |
| PEST/PCB | ENDOSULFAN I | MG/KG | | R | R | R | R | | R | R | | R | 0.002 UJ | | 0.0093 UJ | 0.0027 UJ | 0.004 UJ | 0.0078 UJ | 0.0022 UJ | 0.0028 U | 0.0029 U | 0.0028 U | 0.0029 U |
| PEST/PCB | ENDOSULFAN II | MG/KG | | R | R | R | R | | R | R | | R | 0.0038 UJ | | 0.018 UJ | 0.0053 UJ | 0.0077 UJ | 0.015 UJ | 0.0042 UJ | 0.0055 U | 0.0056 U | 0.0055 U | 0.0056 U |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | | R | R | R | R | | R | R | | R | 0.0038 UJ | | 0.018 UJ | 0.0053 UJ | 0.0077 UJ | 0.015 UJ | 0.0042 UJ | 0.0055 U | 0.0056 U | 0.0055 U | 0.0056 U |
| PEST/PCB | ENDRIN | MG/KG | | R | R | R | R | | R | R | | R | 0.0038 UJ | | 0.018 UJ | 0.0053 UJ | 0.0077 UJ | 0.015 UJ | 0.0042 UJ | 0.0055 U | 0.0056 U | 0.0055 U | 0.0056 U |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | | R | R | R | R | | R | R | | R | 0.0038 UJ | | 0.018 UJ | 0.0053 UJ | 0.0077 UJ | 0.015 UJ | 0.0042 UJ | 0.0055 U | 0.0056 U | 0.0055 U | 0.0056 U |
| PEST/PCB | ENDRIN KETONE | MG/KG | | R | R | R | R | | R | R | | R | 0.0038 UJ | | 0.018 UJ | 0.0053 UJ | 0.0077 UJ | 0.015 UJ | 0.0042 UJ | 0.0055 U | 0.0056 U | 0.0055 U | 0.0056 U |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | | R | R | R | R | | R | R | | R | 0.002 UJ | | 0.0093 UJ | 0.0027 UJ | 0.004 UJ | 0.0078 UJ | 0.0022 UJ | 0.0028 U | 0.0029 U | 0.0028 U | 0.0029 U |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | | R | R | R | R | | R | R | | R | 0.002 UJ | | 0.0093 UJ | 0.0027 UJ | 0.004 UJ | 0.0078 UJ | 0.0022 UJ | 0.0028 U | 0.0029 U | 0.11 | 0.081 |
| PEST/PCB | HEPTACHLOR | MG/KG | | R | R | R | R | | R | R | | R | 0.002 UJ | | 0.0093 UJ | 0.0027 UJ | 0.004 UJ | 0.0078 UJ | 0.0022 UJ | 0.0028 U | 0.0029 U | 0.0028 U | 0.0029 U |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | | R | R | R | R | | R | R | | R | 0.002 UJ | | 0.0093 UJ | 0.0027 UJ | 0.004 UJ | 0.0078 UJ | 0.0022 UJ | 0.0028 U | 0.0029 U | 0.028 J | 0.018 J |
| PEST/PCB | METHOXYCHLOR | MG/KG | | R | R | R | R | | R | R | | R | 0.02 UJ | | 0.093 UJ | 0.027 UJ | 0.04 UJ | 0.078 UJ | 0.022 UJ | 0.028 U | 0.029 U | 0.028 U | 0.029 U |
| PEST/PCB | TOXAPHENE | MG/KG | | R | R | R | R | | R | R | | R | 0.2 UJ | | 0.93 UJ | 0.27 UJ | 0.4 UJ | 0.78 UJ | 0.22 UJ | 0.28 U | 0.29 U | 0.28 U | 0.29 U |
| SVOC | 1,1'-BIPHENYL | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 1 J | | 4 UJ | 0.58 UJ | | 0.014 J | 0.013 J | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 UJ |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | | 0.94 UJ | 0.98 UJ | 1.7 UJ | 42 UJ | | 9.6 UJ | 1.4 UJ | | 0.87 UJ | 0.92 UJ | | 22 UJ | 1.3 UJ | 3.7 UJ | 3.6 UJ | 1 UJ | 1.3 UJ | 1.4 UJ | 1.3 UJ | 6.8 U |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | 2,4-DINITROPHENOL | MG/KG | | 0.94 UJ | 0.98 UJ | 1.7 UJ | 42 UJ | | 9.6 UJ | 1.4 UJ | | 0.87 UJ | 0.92 UJ | | 22 UJ | 1.3 UJ | 3.7 UJ | 3.6 UJ | 1 UJ | 1.3 UJ | 1.4 UJ | 1.3 UJ | 6.8 U |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | 2-CHLOROPHENOL | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | | 0.006 J | 0.4 UJ | 0.012 J | 3.3 J | | 0.07 J | 0.021 J | | 0.043 J | 0.023 J | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.013 J | 2.8 U |
| SVOC | 2-METHYLPHENOL | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 UJ |
| SVOC | 2-NITROANILINE | MG/KG | | 0.94 UJ | 0.98 UJ | 1.7 UJ | 42 UJ | | 9.6 UJ | 1.4 UJ | | 0.87 UJ | 0.92 UJ | | 22 UJ | 1.3 UJ | 3.7 UJ | 3.6 UJ | 1 UJ | 1.3 UJ | 1.4 UJ | 1.3 UJ | 6.8 U |
| SVOC | 2-NITROPHENOL | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | 3-NITROANILINE | MG/KG | | 0.94 UJ | 0.98 UJ | 1.7 UJ | 42 UJ | | 9.6 UJ | 1.4 UJ | | 0.87 UJ | 0.92 UJ | | 22 UJ | 1.3 UJ | 3.7 UJ | 3.6 UJ | 1 UJ | 1.3 UJ | 1.4 UJ | 1.3 UJ | 6.8 U |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | | 0.94 UJ | 0.98 UJ | 1.7 UJ | 42 UJ | | 9.6 UJ | 1.4 UJ | | 0.87 UJ | 0.92 UJ | | 22 UJ | 1.3 UJ | 3.7 UJ | 3.6 UJ | 1 UJ | 1.3 UJ | 1.4 UJ | 1.3 UJ | 6.8 U |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | 4-CHLOROANILINE | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | 4-METHYLPHENOL | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 0.29 J | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 0.35 J | 0.005 J | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | 4-NITROANILINE | MG/KG | | 0.94 UJ | 0.98 UJ | 1.7 UJ | 42 UJ | | 9.6 UJ | 1.4 UJ | | 0.87 UJ | 0.92 UJ | | 22 UJ | 1.3 UJ | 3.7 UJ | 3.6 UJ | 1 UJ | 1.3 UJ | 1.4 UJ | 1.3 UJ | 6.8 U |
| SVOC | 4-NITROPHENOL | MG/KG | | 0.94 UJ | 0.98 UJ | 1.7 UJ | 42 UJ | | 9.6 UJ | 1.4 UJ | | 0.87 UJ | 0.92 UJ | | 22 UJ | 1.3 UJ | 3.7 UJ | 3.6 UJ | 1 UJ | 1.3 UJ | 1.4 UJ | 1.3 UJ | 6.8 U |
| SVOC | ACENAPHTHENE | MG/KG | | 0.023 J | 0.016 J | 0.036 J | 10 J | | 0.59 J | 0.13 J | | 0.13 J | 0.22 J | | 0.21 J | 0.53 UJ | 1.5 UJ | 0.039 J | 0.42 UJ | 0.013 J | 0.012 J | 0.02 J | 2.8 U |
| SVOC | ACENAPHTHYLENE | MG/KG | | 0.02 J | 0.013 J | 0.061 J | 17 UJ | | 4 UJ | 0.032 J | | 0.056 J | 0.058 J | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.032 J | 0.042 J |
| SVOC | ACETOPHENONE | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.008 J | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | ANTHRACENE | MG/KG | | 0.069 J | 0.041 J | 0.12 UJ | 21 J | | 0.73 J | 0.19 J | | 0.32 J | 0.3 J | | 0.35 J | 0.53 UJ | 0.016 J | 0.052 J | 0.42 UJ | 0.014 J | 0.018 J | 0.053 J | 0.076 J |
| SVOC | ATRAZINE | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | BENZALDEHYDE | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.012 J | 0.38 UJ | | 0.32 J | 0.53 UJ | 1.5 UJ | 0.24 J | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | | 0.28 J | 0.16 J | 0.43 J | 29 J | | 4.4 J | 0.52 J | | 0.84 J | 0.96 J | | 1.8 J | 0.014 J | 0.049 J | 0.29 J | 0.007 J | 0.1 J | 0.091 J | 0.22 J | 0.26 J |
| SVOC | BENZO(A)PYRENE | MG/KG | | 0.3 J | 0.17 J | 0.43 J | 29 J | | 4.4 J | 0.49 J | | 0.81 J | 0.92 J | | 2.2 J | 0.016 J | 1.5 UJ | 0.32 J | 0.007 J | 0.12 J | 0.1 J | 0.24 J | 0.29 J |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | | 0.27 J | 0.19 J | 0.35 J | 29 J | | 3.6 J | 0.47 J | | 0.52 J | 1 J | | 1.1 J | 0.019 J | 0.078 J | 0.35 J | 0.009 J | 0.12 J | 0.07 J | 0.2 J | 0.39 J |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | BWL | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | BWSB0062 | HCSB0001 | HCSB0001 | HCSB0002 | HCSB0002 | HCSB0002 | HCSB0003 | HCSB0003 | HCSB0003 | HCSB0004 | HCSB0004 | HCSB0004 | HCSB0005 | HCSB0005 | HCSB0005 | HCSB0006 | HCSB0006 | HCSB0006 | HCSB0007 | HCSB0007 | HCSB0008/15 | HCSB0008/15 |
| | | Field Sample ID | BWSB0062-SS-AA-AB-0 | HCSB0001-SS-AA-AB-0 | HCSB0001-SS-AD-AE-0 | HCSB0002-SS-AA-AB-0 | HCSB0002-SS-AD-AE-0 | HCSB0002-SS-AC-AD-0 | HCSB0003-SS-AA-AB-0 | HCSB0003-SS-AD-AE-0 | HCSB0003-SS-AC-AD-0 | HCSB0004-SS-AA-AB-0 | HCSB0004-SS-AD-AE-0 | HCSB0004-SS-AC-AD-0 | HCSB0005-SS-AA-AB-0 | HCSB0005-SS-AD-AE-0 | HCSB0005-SS-AC-AD-0 | HCSB0006-SS-AA-AB-0 | HCSB0006-SS-AA-AB-1 | HCSB0006-SS-AD-AE-0 | HCSB0007-SS-AA-AB-0 | HCSB0007-SS-AD-AE-0 | HCSB0008-SS-AA-AB-0 | HCSB0015-SS-AA-AB-0 |
| | | Sample Date | 5/19/11 | 6/1/05 | 6/1/05 | 6/1/05 | 6/1/05 | 6/6/05 | 6/1/05 | 6/1/05 | 6/6/05 | 6/2/05 | 6/2/05 | 6/6/05 | 6/2/05 | 6/2/05 | 6/2/05 | 6/2/05 | 6/2/05 | 6/2/05 | 6/2/05 | 6/2/05 | 6/2/05 | 6/6/05 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 1.5-2 | 0-0.5 | 1.5-2 | 1-1.5 | 0-0.5 | 1.5-2 | 1-1.5 | 0-0.5 | 1.5-2 | 1-1.5 | 0-0.5 | 1.5-2 | 1-1.5 | 0-0.5 | 0-0.5 | 1.5-2 | 0-0.5 | 1.5-2 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | | 0.19 J | 0.038 J | 0.26 J | 6.1 J | | 2.9 J | 0.14 J | | 0.46 J | 0.17 J | | 1.4 J | 0.53 UJ | 1.5 UJ | 0.27 J | 0.42 UJ | 0.079 J | 0.56 UJ | 0.19 J | 0.093 J |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | | 0.33 J | 0.18 J | 0.28 J | 27 J | | 5 J | 0.54 J | | 0.58 J | 1.1 J | | 1.8 J | 0.02 J | 0.048 J | 0.23 J | 0.01 J | 0.11 J | 0.096 J | 0.26 J | 0.35 J |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.2 J | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | | 0.052 J | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 0.78 J | 0.42 UJ | 1.3 J | 0.56 UJ | 0.24 J | 2.8 U |
| SVOC | CAPROLACTAM | MG/KG | | 0.39 UJ | 0.007 J | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | CARBAZOLE | MG/KG | | 0.037 J | 0.024 J | 0.068 J | 11 J | | 0.65 J | 0.1 J | | 0.15 J | 0.14 J | | 0.31 J | 0.53 UJ | 1.5 UJ | 0.057 J | 0.42 UJ | 0.02 J | 0.022 J | 0.039 J | 0.058 J |
| SVOC | CHRYSENE | MG/KG | | 0.35 J | 0.19 J | 0.51 J | 29 J | | 5.5 J | 0.58 J | | 0.94 J | 1 J | | 2.4 J | 0.02 J | 0.083 J | 0.41 J | 0.01 J | 0.15 J | 0.13 J | 0.32 J | 0.35 J |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | | 0.087 J | 0.019 J | 0.71 UJ | 2.8 J | | 1.3 J | 0.1 J | | 0.23 J | 0.094 J | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.036 J | 0.56 UJ | 0.07 J | 0.042 J |
| SVOC | DIBENZOFURAN | MG/KG | | 0.013 J | 0.01 J | 0.71 UJ | 7.1 J | | 0.2 J | 0.059 J | | 0.11 J | 0.083 J | | 9 UJ | 0.53 UJ | 1.5 UJ | 0.019 J | 0.42 UJ | 0.006 J | 0.007 J | 0.01 J | 2.8 U |
| SVOC | DIETHYLPHTHALATE | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | DIMETHYLPHTHALATE | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | FLUORANTHENE | MG/KG | | 0.66 J | 0.39 J | 1.2 J | 68 J | | 18 J | 1.6 J | | 2.2 J | 2.7 J | | 4.4 J | 0.044 J | 0.14 J | 0.73 J | 0.018 J | 0.3 J | 0.26 J | 0.55 J | 1.2 J |
| SVOC | FLUORENE | MG/KG | | 0.034 J | 0.025 J | 0.083 J | 11 J | | 0.55 J | 0.13 J | | 0.24 J | 0.21 J | | 0.25 J | 0.53 UJ | 1.5 UJ | 0.04 J | 0.42 UJ | 0.013 J | 0.013 J | 0.019 J | 2.8 U |
| SVOC | HEXACHLOROBENZENE | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | HEXACHLOROETHANE | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | | 0.18 J | 0.047 J | 0.22 J | 7 J | | 2.5 J | 0.16 J | | 0.44 J | 0.22 J | | 1.2 J | 0.006 J | 1.5 UJ | 0.24 J | 0.42 UJ | 0.079 J | 0.56 UJ | 0.18 J | 0.093 J |
| SVOC | ISOPHORONE | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | NAPHTHALENE | MG/KG | | 0.39 UJ | 0.4 UJ | 0.019 J | 15 J | | 0.078 J | 0.017 J | | 0.062 J | 0.016 J | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | NITROBENZENE | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | PENTACHLOROPHENOL | MG/KG | | 0.94 UJ | 0.98 UJ | 1.7 UJ | 42 UJ | | 9.6 UJ | 1.4 UJ | | 0.87 UJ | 0.92 UJ | | 22 UJ | 1.3 UJ | 3.7 UJ | 3.6 UJ | 1 UJ | 1.3 UJ | 1.4 UJ | 1.3 UJ | 6.8 U |
| SVOC | PHENANTHRENE | MG/KG | | 0.35 J | 0.22 J | 0.68 J | 62 J | | 6.9 J | 0.93 J | | 1.6 J | 1.3 J | | 2.4 J | 0.02 J | 0.094 J | 0.4 J | 0.009 J | 0.16 J | 0.16 J | 0.29 J | 0.32 J |
| SVOC | PHENOL | MG/KG | | 0.39 UJ | 0.4 UJ | 0.71 UJ | 17 UJ | | 4 UJ | 0.58 UJ | | 0.36 UJ | 0.38 UJ | | 9 UJ | 0.53 UJ | 1.5 UJ | 1.5 UJ | 0.42 UJ | 0.55 UJ | 0.56 UJ | 0.55 UJ | 2.8 U |
| SVOC | PYRENE | MG/KG | | 0.54 J | 0.31 J | 1 J | 41 J | | 8.3 J | 0.68 J | | 1.6 J | 1.7 J | | 2.3 J | 0.033 J | 0.11 J | 0.61 J | 0.013 J | 0.23 J | 0.17 J | 0.48 J | 0.56 J |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | 1,1-DICHLOROETHANE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | 1,1-DICHLOROETHENE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | | 0.01 UJ | 0.012 UJ | 0.011 UJ | 0.011 UJ | 0.013 UJ | 0.011 UJ | 0.018 UJ | 0.0088 UJ | 0.012 UJ | 0.013 UJ | 0.011 UJ | 0.071 UJ | 0.016 UJ | 0.038 UJ | 0.051 UJ | 0.012 UJ | 0.021 UJ | 0.032 UJ | | |
| VOC | 1,2-DIBROMOETHANE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | 1,2-DICHLOROETHANE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | 2-HEXANONE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | | 0.01 UJ | 0.012 UJ | 0.011 UJ | 0.011 UJ | 0.013 U | 0.011 UJ | 0.018 UJ | 0.0088 U | 0.012 UJ | 0.013 UJ | 0.011 U | 0.071 UJ | 0.016 UJ | 0.038 UJ | 0.051 UJ | 0.012 UJ | 0.021 UJ | 0.032 UJ | | |
| VOC | ACETONE | MG/KG | | 0.022 U | 0.048 U | 0.048 | 0.019 U | 0.084 | 0.078 J | 0.09 J | 0.034 U | 0.077 | 0.02 U | 0.013 U | 0.071 UJ | 0.024 U | 0.038 UJ | 0.051 UJ | 0.021 U | 0.021 U | 0.26 | | |
| VOC | BENZENE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | BROMOFORM | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | BROMOMETHANE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | CARBON DISULFIDE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | CARBON TETRACHLORIDE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | CHLOROBENZENE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | CHLOROETHANE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | CHLOROFORM | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | CHLOROMETHANE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | CYCLOHEXANE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 UJ | 0.011 U | 0.018 U | 0.0088 UJ | 0.012 U | 0.013 U | 0.011 UJ | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | DICHLOROMETHANE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.009 U | 0.012 U | 0.013 U | 0.002 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | ETHYLBENZENE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | ISOPROPYLBENZENE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | METHYL ACETATE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | METHYL ETHYL KETONE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | METHYLCYCLOHEXANE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | STYRENE | MG/KG | | 0.01 U | 0.005 J | 0.011 U | 0.009 J | 0.2 | 0.005 J | 0.015 J | 0.004 J | 0.017 | 0.013 U | 0.002 J | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | TETRACHLOROETHENE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | TOLUENE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.009 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | VINYL CHLORIDE | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |
| VOC | XYLENES (TOTAL) | MG/KG | | 0.01 U | 0.012 U | 0.011 U | 0.011 U | 0.013 U | 0.011 U | 0.018 U | 0.0088 U | 0.012 U | 0.013 U | 0.011 U | 0.071 UJ | 0.016 U | 0.038 UJ | 0.051 UJ | 0.012 U | 0.021 U | 0.032 U | | |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCSB0008/15 | HCSB0009 | HCSB0010 | HCSB0011 | HCSB0012 | HCSB0013 | HCSB0014 | HCSB0014 | HCSB0016 | HCSB0016 | HCSB0017 | HCSB0018 | HCSB0019 | HCSB0020 | HCSB0021 | HCSB0022 | HCSB0023 | HCSB0024 | HCSB0025 | HCSB0026 | HCSB0027 |
| | | Field Sample ID | HCSB0015-SS-AC-AD-0 | HCSB0009-SS-AA-AB-0 | HCSB0010-SS-AA-AB-0 | HCSB0011-SS-AA-AB-0 | HCSB0012-SS-AA-AB-0 | HCSB0013-SS-AA-AB-0 | HCSB0014-SS-AA-AB-0 | HCSB0014-SS-AC-AD-0 | HCSB0016-SS-AA-AB-0 | HCSB0016-SS-AD-AE-0 | HCSB0017-SS-AA-AB-0 | HCSB0018-SS-AA-AB-0 | HCSB0019-SS-AA-AB-0 | HCSB0020-SS-AA-AB-0 | HCSB0021-SS-AA-AB-0 | HCSB0022-SS-AA-AB-0 | HCSB0023-SS-AA-AB-0 | HCSB0024-SS-AA-AB-0 | HCSB0025-SS-AA-AB-0 | HCSB0026-SS-AA-AB-0 | HCSB0027-SS-AA-AB-0 |
| | | Sample Date | 6/6/05 | 6/3/05 | 6/3/05 | 6/3/05 | 6/3/05 | 6/3/05 | 6/3/05 | 6/3/05 | 6/6/05 | 6/20/06 | 6/6/05 | 6/6/05 | 6/6/05 | 6/6/05 | 6/6/05 | 6/6/05 | 6/6/05 | 6/6/05 | 6/6/05 | 6/6/05 | 6/6/05 |
| | | Depth (ft) | 1-1.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 1-1.5 | 0-0.5 | 1.5-2 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | | 3460 | 6390 J | 7620 J | 5780 J | 6960 J | 746 | | 16800 J | 9180 J | 14400 J | 13400 J | 14100 | 12400 J | 11100 J | 9340 J | 16800 J | 13100 J | 11500 J | 10000 J | 813 |
| METALS | ANTIMONY | MG/KG | | 1.7 UJ | 2.9 J | 3.9 J | 2.8 UJ | 6 J | 1.4 UJ | | 18.3 J | 6.9 J | 25.5 J | 24.4 J | 23.9 J | 93.2 J | 47.7 J | 11.3 J | 4.3 UJ | 6.2 UJ | 4 J | 4.7 J | 3.8 J |
| METALS | ARSENIC | MG/KG | | 35.3 | 72 J | 75.7 J | 60.4 J | 72.6 J | 3.3 | | 739 J | 191 J | 280 J | 421 J | 447 | 443 J | 975 J | 83.6 J | 146 J | 303 J | 232 J | 158 J | 19.6 |
| METALS | BARIUM | MG/KG | | 118 | 242 J | 437 J | 267 J | 320 J | 19.4 J | | 483 J | 222 J | 541 J | 579 J | 599 | 754 J | 797 J | 1880 J | 346 J | 602 J | 254 J | 388 J | 78.5 |
| METALS | BERYLLIUM | MG/KG | | 0.31 J | 0.56 J | 0.67 J | 0.54 J | 0.6 J | 0.09 U | | 1.6 J | 0.71 J | 1.4 J | 1.4 J | 1.4 J | 1.1 J | 0.92 J | 0.49 J | 1.8 J | 1.3 J | 1.1 J | 0.88 J | 0.09 |
| METALS | CADMIUM | MG/KG | | 1.2 J | 0.7 J | 0.73 J | 1.1 J | 0.45 UJ | 0.12 U | | 13.5 J | 3.7 J | 8.5 J | 5.2 J | 4.6 | 7 J | 1.6 J | 0.57 J | 5.2 J | 5 J | 2.5 J | 7.4 J | 0.11 U |
| METALS | CALCIUM | MG/KG | | 1410 J | 4430 J | 7370 J | 5890 J | 9650 J | 281 J | | 4830 J | 5370 J | 7350 J | 6720 J | 6820 | 8070 J | 7730 J | 1060 J | 4340 J | 9860 J | 2690 J | 5000 J | 410 J |
| METALS | CHROMIUM | MG/KG | | 18.3 | 32.7 J | 41 J | 29.3 J | 27.3 J | 5.5 | | 2300 J | 1330 J | 2170 J | 2040 J | 1990 | 4760 J | 942 J | 411 J | 156 J | 67.9 J | 66.7 J | 48 J | 265 J |
| METALS | COBALT | MG/KG | | 3.7 J | 8.3 J | 9.5 J | 5.6 J | 2.1 J | 0.48 U | | 14.6 J | 5.5 J | 11.7 J | 21.5 J | 19.4 J | 32.8 J | 47.9 J | 3.3 J | 14.1 J | 7.7 J | 3.1 J | 3.9 J | 0.43 U |
| METALS | COPPER | MG/KG | | 25.6 | 46.1 J | 52.4 J | 45.4 J | 44.7 J | 3.8 J | | 254 J | 89.8 J | 171 J | 133 J | 138 | 321 J | 151 J | 141 J | 114 J | 74.2 J | 69.5 J | 64.8 J | 8.3 |
| METALS | CYANIDE | MG/KG | | 0.13 U | 0.19 UJ | 0.21 UJ | 0.22 UJ | 0.38 UJ | 0.11 U | | 69.7 J | 218 J | 155 J | 259 J | 160 | 210 J | 86 J | 34.1 J | 3.4 J | 0.47 UJ | 0.26 UJ | 0.33 UJ | 10.9 |
| METALS | IRON | MG/KG | | 12200 | 22500 J | 25400 J | 21700 J | 75200 J | 2150 | | 43000 J | 20600 J | 38800 J | 61400 J | 59900 | 31100 J | 69000 J | 22100 J | 35100 J | 42400 J | 21000 J | 17300 J | 1930 |
| METALS | LEAD | MG/KG | | 208 | 563 J | 718 J | 498 J | 423 J | 43.6 | | 4630 J | 1920 J | 3550 J | 2740 J | 2710 | 8440 J | 4200 J | 3010 J | 1360 J | 560 J | 828 J | 703 J | 295 |
| METALS | MAGNESIUM | MG/KG | | 361 J | 746 J | 1110 J | 878 J | 1050 J | 177 J | | 906 J | 616 J | 916 J | 1130 J | 1190 J | 873 J | 1090 J | 675 J | 1150 J | 1310 J | 583 J | 597 J | 63.8 J |
| METALS | MANGANESE | MG/KG | | 73 | 501 J | 568 J | 388 J | 280 J | 3.7 J | | 171 J | 143 J | 397 J | 1380 J | 1300 | 310 J | 1820 J | 32.1 J | 224 J | 246 J | 25.3 J | 51.7 J | 2.5 J |
| METALS | MERCURY | MG/KG | | 0.1 U | 0.19 J | 0.21 J | 0.16 UJ | 0.26 UJ | 0.07 U | | 0.93 J | 0.59 J | 1.3 J | 1.4 J | 1.2 | 4 J | 3.4 J | 3.3 J | 0.55 J | 0.32 J | 0.51 J | 0.57 J | 0.16 |
| METALS | NICKEL | MG/KG | | 7.2 J | 11.4 J | 13.8 J | 11.7 J | 9.6 J | 0.8 J | | 29.8 J | 11.5 J | 23.3 J | 29.3 J | 26.8 | 22.6 J | 23.7 J | 22.9 J | 28.3 J | 25.9 J | 12.3 J | 12.5 J | 0.7 U |
| METALS | POTASSIUM | MG/KG | | 178 J | 269 J | 383 J | 298 J | 347 J | 217 J | | 439 J | 179 J | 442 J | 368 J | 401 J | 418 J | 438 J | 384 J | 433 J | 598 J | 252 J | 339 J | 106 J |
| METALS | SELENIUM | MG/KG | | 1.7 U | 3 J | 4.3 J | 2.8 UJ | 9.9 J | 1.4 U | | 4.3 UJ | 5.3 UJ | 4.5 UJ | 4.1 J | 7 J | 5.5 UJ | 8.5 J | 3.4 UJ | 5.7 J | 6.2 UJ | 5.7 J | 4.4 UJ | 1.2 U |
| METALS | SILVER | MG/KG | | 0.55 U | 0.76 UJ | 0.86 UJ | 0.9 UJ | 1.6 UJ | 0.43 U | | 1.3 UJ | 0.94 UJ | 1.4 UJ | 1.1 UJ | 1.2 U | 1.7 UJ | 0.95 UJ | 1 UJ | 1.3 UJ | 1.9 UJ | 1.1 UJ | 1.4 UJ | 0.38 U |
| METALS | SODIUM | MG/KG | | 83.6 U | 117 UJ | 185 J | 137 UJ | 275 J | 66.3 U | | 209 UJ | 192 UJ | 221 UJ | 177 UJ | 181 U | 270 UJ | 148 UJ | 163 UJ | 210 UJ | 300 UJ | 164 UJ | 213 UJ | 59.2 U |
| METALS | THALLIUM | MG/KG | | 1.6 UJ | 2.2 UJ | 2.5 UJ | 2.6 UJ | 4.5 UJ | 1.2 UJ | | 3.9 UJ | 4.4 UJ | 4.1 UJ | 3.3 UJ | 3.4 U | 5.1 UJ | 2.8 UJ | 3.1 UJ | 3.9 UJ | 5.6 UJ | 3.1 UJ | 4 UJ | 1.1 U |
| METALS | VANADIUM | MG/KG | | 14.2 | 27.4 J | 32.9 J | 25.9 J | 36.7 J | 5.2 | | 72.6 J | 29.3 J | 67.6 J | 66.8 J | 68.8 | 68.6 J | 82.3 J | 62.5 J | 64.2 J | 61.1 J | 52.9 J | 48.7 J | 5.3 J |
| METALS | ZINC | MG/KG | | 194 | 260 J | 330 J | 291 J | 326 J | 16.5 | | 1190 J | 521 J | 1100 J | 993 | 946 | 2160 | 1260 J | 204 J | 813 J | 675 J | 295 J | 693 J | 26 |
| PEST/PCB | 4,4'-DDD | MG/KG | | 0.0064 U | 0.0092 UJ | 0.01 UJ | 0.012 J | 0.066 J | 0.0052 U | | 0.017 J | | 0.07 J | 0.041 J | 0.014 UJ | 0.037 J | R | 0.059 J | 0.023 J | 0.023 UJ | R | 0.016 UJ | 0.0046 U |
| PEST/PCB | 4,4'-DDE | MG/KG | | 0.0064 U | 0.027 J | 0.01 UJ | 0.011 J | 0.04 J | 0.0052 U | | 0.023 J | | 0.034 J | 0.029 J | 0.024 J | 0.021 UJ | R | 0.027 J | 0.017 J | 0.023 UJ | R | 0.016 UJ | 0.0046 U |
| PEST/PCB | 4,4'-DDT | MG/KG | | 0.0064 U | 0.013 J | 0.011 J | 0.011 UJ | 0.019 UJ | 0.0052 U | | 0.019 J | | 0.02 J | 0.03 J | 0.023 J | 0.021 UJ | R | 0.021 J | 0.016 UJ | 0.023 UJ | R | 0.016 UJ | 0.0046 U |
| PEST/PCB | ALDRIN | MG/KG | | 0.0033 U | 0.0048 UJ | 0.0054 UJ | 0.0056 UJ | 0.0096 UJ | 0.0027 U | | 0.0084 UJ | | 0.0088 UJ | 0.0071 UJ | 0.0073 UJ | 0.011 UJ | R | 0.0066 UJ | 0.0082 UJ | 0.012 UJ | R | 0.0084 UJ | 0.0023 U |
| PEST/PCB | ALPHA-BHC | MG/KG | | 0.0033 U | 0.0048 UJ | 0.0054 UJ | 0.0056 UJ | 0.0096 UJ | 0.0027 U | | 0.0084 UJ | | 0.0088 UJ | 0.0071 UJ | 0.0073 UJ | 0.011 UJ | R | 0.0066 UJ | 0.0082 UJ | 0.012 UJ | R | 0.0084 UJ | 0.0023 U |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | | 0.0033 U | 0.0048 UJ | 0.0054 UJ | 0.0056 UJ | 0.0096 UJ | 0.0027 U | | 0.0084 UJ | | 0.0088 UJ | 0.0071 UJ | 0.0073 UJ | 0.011 UJ | R | R | 0.0082 UJ | 0.012 UJ | R | 0.0084 UJ | 0.0023 U |
| PEST/PCB | AROCLOR-1016 | MG/KG | | 0.064 U | 0.092 UJ | 0.1 UJ | 0.11 UJ | 0.19 UJ | 0.052 U | | 0.16 UJ | 0.2 UJ | 0.17 UJ | 0.14 UJ | 0.14 UJ | 0.21 UJ | R | 0.13 UJ | 0.16 UJ | 0.23 UJ | R | 0.16 UJ | 0.046 U |
| PEST/PCB | AROCLOR-1221 | MG/KG | | 0.13 U | 0.19 UJ | 0.21 UJ | 0.22 UJ | 0.38 UJ | 0.1 U | | 0.33 UJ | 0.2 UJ | 0.34 UJ | 0.28 UJ | 0.29 UJ | 0.43 UJ | R | 0.26 UJ | 0.32 UJ | 0.47 UJ | R | 0.33 UJ | 0.092 U |
| PEST/PCB | AROCLOR-1232 | MG/KG | | 0.064 U | 0.092 UJ | 0.1 UJ | 0.11 UJ | 0.19 UJ | 0.052 U | | 0.16 UJ | 0.2 UJ | 0.17 UJ | 0.14 UJ | 0.14 UJ | 0.21 UJ | R | 0.13 UJ | 0.16 UJ | 0.23 UJ | R | 0.16 UJ | 0.046 U |
| PEST/PCB | AROCLOR-1242 | MG/KG | | 0.064 U | 0.092 UJ | 0.1 UJ | 0.11 UJ | 0.19 UJ | 0.052 U | | 0.16 UJ | 0.2 UJ | 0.17 UJ | 0.14 UJ | 0.14 UJ | 0.21 UJ | R | 0.13 UJ | 0.16 UJ | 0.23 UJ | R | 0.16 UJ | 0.046 U |
| PEST/PCB | AROCLOR-1248 | MG/KG | | 0.064 U | 0.092 UJ | 0.1 UJ | 0.11 UJ | 0.19 UJ | 0.052 U | | 0.16 UJ | 0.2 UJ | 0.17 UJ | 0.14 UJ | 0.14 UJ | 0.21 UJ | R | 0.13 UJ | 0.16 UJ | 0.23 UJ | R | 0.16 UJ | 0.046 U |
| PEST/PCB | AROCLOR-1254 | MG/KG | | 0.064 U | 0.092 UJ | 0.1 UJ | 0.11 UJ | 0.19 UJ | 0.052 U | | 0.16 UJ | 0.2 UJ | 0.17 UJ | 0.14 UJ | 0.14 UJ | 0.21 UJ | R | 0.13 UJ | 0.16 UJ | 0.23 UJ | R | 0.16 UJ | 0.046 U |
| PEST/PCB | AROCLOR-1260 | MG/KG | | 0.064 U | 0.092 UJ | 0.1 UJ | 0.11 UJ | 0.19 UJ | 0.052 U | | 0.16 UJ | 0.2 UJ | 0.17 UJ | 0.14 UJ | 0.14 UJ | 0.21 UJ | R | 0.13 UJ | 0.16 UJ | 0.23 UJ | R | 0.16 UJ | 0.046 U |
| PEST/PCB | BETA-BHC | MG/KG | | 0.0033 U | 0.0048 UJ | 0.0054 UJ | 0.0056 UJ | 0.0096 UJ | 0.0027 U | | 0.0084 UJ | | 0.0088 UJ | 0.0071 UJ | 0.0073 UJ | 0.011 UJ | R | 0.0066 UJ | 0.0082 UJ | 0.012 UJ | R | 0.0084 UJ | 0.0023 U |
| PEST/PCB | DELTA-BHC | MG/KG | | 0.0033 U | 0.0048 UJ | 0.0054 UJ | 0.0056 UJ | 0.0096 UJ | 0.0027 U | | 0.0084 UJ | | 0.0088 UJ | 0.0071 UJ | 0.0073 UJ | 0.011 UJ | R | 0.0066 UJ | 0.0082 UJ | 0.012 UJ | R | 0.0084 UJ | 0.0023 U |
| PEST/PCB | DIELDRIN | MG/KG | | 0.0064 U | 0.0092 UJ | 0.01 UJ | 0.011 UJ | 0.019 UJ | 0.0052 U | | 0.016 UJ | | 0.017 UJ | 0.014 UJ | 0.014 UJ | 0.021 UJ | R | 0.013 UJ | 0.016 UJ | 0.023 UJ | R | 0.016 UJ | 0.0046 U |
| PEST/PCB | ENDOSULFAN I | MG/KG | | 0.0033 U | 0.0048 UJ | 0.0054 UJ | 0.0056 UJ | 0.0096 UJ | 0.0027 U | | 0.0084 UJ | | 0.0088 UJ | 0.0071 UJ | 0.0073 UJ | 0.011 UJ | R | 0.0066 UJ | 0.0082 UJ | 0.012 UJ | R | 0.0084 UJ | 0.0023 U |
| PEST/PCB | ENDOSULFAN II | MG/KG | | 0.0064 U | 0.0092 UJ | 0.01 UJ | 0.011 UJ | 0.019 UJ | 0.0052 U | | 0.016 UJ | | 0.017 UJ | 0.014 UJ | 0.014 UJ | 0.021 UJ | R | 0.013 UJ | 0.016 UJ | 0.023 UJ | R | 0.016 UJ | 0.0046 U |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | | 0.0064 U | 0.0092 UJ | 0.01 UJ | 0.011 UJ | 0.019 UJ | 0.0052 U | | 0.016 UJ | | 0.017 UJ | R | 0.014 UJ | 0.021 UJ | R | 0.013 UJ | 0.016 UJ | 0.023 UJ | R | 0.016 UJ | 0.0046 U |
| PEST/PCB | ENDRIN | MG/KG | | 0.0064 U | 0.0092 UJ | 0.01 UJ | 0.011 UJ | 0.019 UJ | 0.0052 U | | 0.016 UJ | | 0.017 UJ | 0.014 UJ | 0.014 UJ | 0.021 UJ | R | 0.013 UJ | 0.016 UJ | 0.023 UJ | R | 0.016 UJ | 0.0046 U |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | | 0.0064 U | 0.0092 UJ | 0.01 UJ | 0.011 UJ | 0.019 UJ | 0.0052 U | | 0.016 UJ | | 0.017 UJ | 0.014 UJ | 0.014 UJ | 0.021 UJ | R | 0.013 UJ | 0.016 UJ | 0.023 UJ | R | 0.016 UJ | 0.0046 U |
| PEST/PCB | ENDRIN KETONE | MG/KG | | 0.0064 U | 0.0092 UJ | 0.01 UJ | 0.011 UJ | 0.019 UJ | 0.0052 U | | 0.016 UJ | | 0.017 UJ | 0.014 UJ | 0.014 UJ | 0.021 UJ | R | 0.013 UJ | 0.016 UJ | 0.023 UJ | R | 0.016 UJ | 0.0046 U |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | | 0.0033 U | 0.0048 UJ | 0.0054 UJ | 0.0056 UJ | 0.0096 UJ | 0.0027 U | | 0.0084 UJ | | 0.0088 UJ | 0.0071 UJ | 0.0073 UJ | 0.011 UJ | R | 0.0066 UJ | 0.0082 UJ | 0.012 UJ | R | 0.0084 UJ | 0.0023 U |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | | 0.0033 U | 0.0048 UJ | 0.0054 UJ | 0.0056 UJ | 0.0096 UJ | 0.0027 U | | 0.0084 UJ | | 0.0088 UJ | 0.0071 UJ | 0.0073 UJ | 0.011 UJ | R | 0.022 J | 0.0082 UJ | 0.012 UJ | R | 0.0084 UJ | 0.0023 U |
| PEST/PCB | HEPTACHLOR | MG/KG | | 0.0033 U | 0.0048 UJ | 0.0054 UJ | 0.0056 UJ | 0.0096 UJ | 0.0027 U | | 0.0084 UJ | | 0.0088 UJ | 0.0071 UJ | 0.0073 UJ | 0.011 UJ | R | 0.0066 UJ | 0.0082 UJ | 0.012 UJ | R | 0.0084 UJ | 0.0023 U |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | | 0.0033 U | 0.0048 UJ | 0.0054 UJ | 0.0056 UJ | 0.0096 UJ | 0.0027 U | | 0.0084 UJ | | 0.0088 UJ | 0.0071 UJ | 0.0073 UJ | 0.011 UJ | R | 0.0066 UJ | 0.0082 UJ | 0.012 UJ | R | 0.0084 UJ | 0.0023 U |
| PEST/PCB | METHOXYCHLOR | MG/KG | | 0.033 U | 0.048 UJ | 0.054 UJ | 0.056 UJ | 0.096 UJ | 0.027 U | | 0.084 UJ | | 0.088 UJ | 0.071 UJ | 0.073 UJ | 0.11 UJ | R | 0.066 UJ | 0.082 UJ | 0.12 UJ | R | 0.084 UJ | 0.023 U |
| PEST/PCB | TOXAPHENE | MG/KG | | 0.33 U | 0.48 UJ | 0.54 UJ | 0.56 UJ | 0.96 UJ | 0.27 U | | 0.84 UJ | | 0.88 UJ | 0.71 UJ | 0.73 UJ | 1.1 UJ | R | 0.66 UJ | 0.82 UJ | 1.2 UJ | R | 0.84 UJ | 0.23 U |
| SVOC | 1,1'-BIPHENYL | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 U | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 0.16 J | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | | 3.1 U | 11 UJ | 13 UJ | 13 UJ | 9.1 UJ | 1.3 U | | 7.9 UJ | | 21 UJ | 17 UJ | 6.8 UJ | 5.1 UJ | 14 UJ | 16 UJ | 7.8 UJ | 5.6 UJ | 6.2 UJ | 20 UJ | 1.1 U |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 0.07 J | | 8.5 UJ | 6.9 UJ | 0.051 J | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | 2,4-DINITROPHENOL | MG/KG | | 3.1 U | 11 UJ | 13 UJ | 13 UJ | 9.1 UJ | 1.3 U | | 7.9 UJ | | 21 UJ | 17 UJ | 6.8 UJ | 5.1 UJ | 14 UJ | 16 UJ | 7.8 UJ | 5.6 UJ | 6.2 UJ | 20 UJ | 1.1 U |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | 2-CHLOROPHENOL | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 0.17 J | | 0.12 J | 0.18 J | 0.14 J | 0.11 J | 0.1 J | 0.16 J | 0.058 J | 2.3 UJ | 0.07 J | 8.2 UJ | 0.007 J |
| SVOC | 2-METHYLPHENOL | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | 2-NITROANILINE | MG/KG | | 3.1 U | 11 UJ | 13 UJ | 13 UJ | 9.1 UJ | 1.3 U | | 7.9 UJ | | 21 UJ | 17 UJ | 6.8 UJ | 5.1 UJ | 14 UJ | 16 UJ | 7.8 UJ | 5.6 UJ | 6.2 UJ | 20 UJ | 1.1 U |
| SVOC | 2-NITROPHENOL | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | 3-NITROANILINE | MG/KG | | 3.1 U | 11 UJ | 13 UJ | 13 UJ | 9.1 UJ | 1.3 U | | 7.9 UJ | | 21 UJ | 17 UJ | 6.8 UJ | 5.1 UJ | 14 UJ | 16 UJ | 7.8 UJ | 5.6 UJ | 6.2 UJ | 20 UJ | 1.1 U |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | | 3.1 U | 11 UJ | 13 UJ | 13 UJ | 9.1 UJ | 1.3 U | | 7.9 UJ | | 21 UJ | 17 UJ | 6.8 UJ | 5.1 UJ | 14 UJ | 16 UJ | 7.8 UJ | 5.6 UJ | 6.2 UJ | 20 UJ | 1.1 U |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | 4-CHLOROANILINE | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | 4-METHYLPHENOL | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 0.072 J | | 8.5 UJ | 6.9 UJ | 0.065 J | 2.1 UJ | 5.8 UJ | 0.098 J | 3.2 UJ | 2.4 J | 0.082 J | 8.2 UJ | 0.46 U |
| SVOC | 4-NITROANILINE | MG/KG | | 3.1 U | 11 UJ | 13 UJ | 13 UJ | 9.1 UJ | 1.3 U | | 7.9 UJ | | 21 UJ | 17 UJ | 6.8 UJ | 5.1 UJ | 14 UJ | 16 UJ | 7.8 UJ | 5.6 UJ | 6.2 UJ | 20 UJ | 1.1 U |
| SVOC | 4-NITROPHENOL | MG/KG | | 3.1 U | 11 UJ | 13 UJ | 13 UJ | 9.1 UJ | 1.3 U | | 7.9 UJ | | 21 UJ | 17 UJ | 6.8 UJ | 5.1 UJ | 14 UJ | 16 UJ | 7.8 UJ | 5.6 UJ | 6.2 UJ | 20 UJ | 1.1 U |
| SVOC | ACENAPHTHENE | MG/KG | | 0.04 J | 0.37 J | 0.34 J | 0.39 J | 0.15 J | 0.006 J | | 0.92 J | 0.3 J | 0.59 J | 0.94 UJ | 0.74 J | 0.21 J | 0.32 J | 0.81 J | 0.33 J | 0.061 J | 0.34 J | 0.19 J | 0.46 U |
| SVOC | ACENAPHTHYLENE | MG/KG | | 0.055 J | 4.6 UJ | 0.14 J | 5.4 UJ | 0.052 J | 0.52 U | | 2.5 J | 0.37 J | 0.99 J | 1.8 J | 2.5 J | 0.36 J | 0.75 J | 0.49 J | 0.44 J | 0.086 J | 0.56 J | 0.26 J | 0.006 J |
| SVOC | ACETOPHENONE | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 0.077 J | | 8.5 UJ | 6.9 UJ | 0.056 J | 2.1 UJ | 0.13 J | 6.4 UJ | 3.2 UJ | 0.024 J | 0.029 J | 8.2 UJ | 0.46 U |
| SVOC | ANTHRACENE | MG/KG | | 0.12 J | 0.58 J | 0.54 J | 0.58 J | 0.25 J | 0.01 J | | 3.3 J | 0.68 J | 2.2 J | 0.94 J | 2.9 J | 0.86 J | 0.98 J | 1.9 J | 1.2 J | 0.23 J | 1.3 J | 0.6 J | 0.014 J |
| SVOC | ATRAZINE | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 4.4 J | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | BENZALDEHYDE | MG/KG | | 0.042 J | 4.6 UJ | 5.2 UJ | 5.4 UJ | 0.32 J | 0.52 UJ | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | | 0.54 J | 3.6 J | 3.5 J | 3.4 J | 1.5 J | 0.047 J | | 8.3 J | 3 J | 6.2 J | 11 J | 7.4 J | 2 J | 2.9 J | 6.1 J | 3.5 J | 0.7 J | 3.5 J | 2.1 J | 0.035 J |
| SVOC | BENZO(A)PYRENE | MG/KG | | 0.54 J | 3.8 J | 4 J | 4 J | 1.7 J | 0.052 J | | 9.8 J | 3.3 J | 7.4 J | 12 J | 9.2 J | 2.6 J | 3.7 J | 7.2 J | 4 J | 0.88 J | 4 J | 2.6 J | 0.039 J |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | | 0.75 J | 3.7 J | 3.6 J | 2 J | 1.5 J | 0.054 J | | 11 J | 4 J | 7.1 J | 14 J | 11 J | 3.5 J | 4.8 J | 8.8 J | 5.1 J | 1.2 J | 4.6 J | 3.3 J | 0.048 J |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCSB0008/15 | HCSB0009 | HCSB0010 | HCSB0011 | HCSB0012 | HCSB0013 | HCSB0014 | HCSB0014 | HCSB0016 | HCSB0016 | HCSB0017 | HCSB0018 | HCSB0019 | HCSB0020 | HCSB0021 | HCSB0022 | HCSB0023 | HCSB0024 | HCSB0025 | HCSB0026 | HCSB0027 |
| | | Field Sample ID | HCSB0015-SS-AC-AD-0 | HCSB0009-SS-AA-AB-0 | HCSB0010-SS-AA-AB-0 | HCSB0011-SS-AA-AB-0 | HCSB0012-SS-AA-AB-0 | HCSB0013-SS-AA-AB-0 | HCSB0014-SS-AA-AB-0 | HCSB0014-SS-AC-AD-0 | HCSB0016-SS-AA-AB-0 | HCSB0016-SS-AD-AE-0 | HCSB0017-SS-AA-AB-0 | HCSB0018-SS-AA-AB-0 | HCSB0019-SS-AA-AB-0 | HCSB0020-SS-AA-AB-0 | HCSB0021-SS-AA-AB-0 | HCSB0022-SS-AA-AB-0 | HCSB0023-SS-AA-AB-0 | HCSB0024-SS-AA-AB-0 | HCSB0025-SS-AA-AB-0 | HCSB0026-SS-AA-AB-0 | HCSB0027-SS-AA-AB-0 |
| | | Sample Date | 6/6/05 | 6/3/05 | 6/3/05 | 6/3/05 | 6/3/05 | 6/3/05 | 6/3/05 | 6/3/05 | 6/6/05 | 6/20/06 | 6/6/05 | 6/6/05 | 6/6/05 | 6/6/05 | 6/6/05 | 6/6/05 | 6/6/05 | 6/6/05 | 6/6/05 | 6/6/05 | 6/6/05 |
| | | Depth (ft) | 1-1.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 1-1.5 | 0-0.5 | 1.5-2 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | | 0.33 J | 2.4 J | 2.5 J | 2.5 J | 1.2 J | 0.044 J | | 3 J | 0.89 J | 1.6 J | 3.4 J | 2.6 J | 0.86 J | 1.3 J | 2.5 J | 0.91 J | 0.31 J | 1.3 J | 0.62 J | 0.021 J |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | | 0.38 J | 3.6 J | 3.4 J | 4.2 J | 1.1 J | 0.058 J | | 12 J | 3.8 J | 9.7 J | 16 J | 11 J | 3.4 J | 4.8 J | 9.1 J | 4.6 J | 1.1 J | 4.6 J | 3 J | 0.056 J |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | | 0.15 J | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 0.33 J | | 8.5 UJ | 6.9 UJ | 0.29 J | 0.44 J | 0.75 J | 1 J | 3.2 UJ | 0.66 J | 0.28 J | 8.2 UJ | 0.46 U |
| SVOC | CAPROLACTAM | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 0.22 J | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | CARBAZOLE | MG/KG | | 0.05 J | 0.44 J | 0.49 J | 0.51 J | 0.23 J | 0.01 J | | 2.2 J | | 1 J | 2 J | 2 J | 0.41 J | 0.7 J | 1 J | 0.58 J | 0.12 J | 0.74 J | 0.36 J | 0.008 J |
| SVOC | CHRYSENE | MG/KG | | 0.66 J | 4.5 J | 4.6 J | 4.4 J | 1.8 J | 0.069 J | | 10 J | 3.9 J | 7.8 J | 14 J | 9.1 J | 2.7 J | 3.7 J | 7.8 J | 4.3 J | 1 J | 4.6 J | 2.7 J | 0.056 J |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | | 1.3 U | 1.1 J | 1 J | 1.1 J | 3.8 UJ | 0.52 U | | 1.2 J | 0.59 J | 0.74 J | 1.3 J | 1 J | 0.36 J | 0.56 J | 0.93 J | 0.38 J | 0.1 J | 0.46 J | 0.29 J | 0.46 U |
| SVOC | DIBENZOFURAN | MG/KG | | 0.017 J | 0.13 J | 0.14 J | 0.16 J | 0.058 J | 0.52 U | | 0.46 J | | 0.38 J | 0.46 J | 0.38 J | 0.17 J | 0.15 J | 0.27 J | 0.15 J | 0.043 J | 0.15 J | 8.2 UJ | 0.012 J |
| SVOC | DIETHYLPHTHALATE | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | DIMETHYLPHTHALATE | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | | 1.3 UJ | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | FLUORANTHENE | MG/KG | | 1.1 J | 11 J | 10 J | 10 J | 3.3 J | 0.13 J | | 33 J | 6.6 J | 17 J | 52 J | 20 J | 9.7 J | 15 J | 29 J | 17 J | 2.7 J | 20 J | 8.1 J | 0.092 J |
| SVOC | FLUORENE | MG/KG | | 0.066 J | 0.39 J | 0.4 J | 0.46 J | 0.18 J | 0.52 U | | 1.4 J | 0.42 J | 1 J | 1.3 J | 1.2 J | 0.29 J | 0.42 J | 0.62 J | 0.45 J | 0.063 J | 0.39 J | 0.24 J | 0.006 J |
| SVOC | HEXACHLOROBENZENE | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | | 1.3 UJ | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | HEXACHLOROETHANE | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | | 0.3 J | 2.1 J | 2.1 J | 2.2 J | 3.8 UJ | 0.04 J | | 3.4 J | 1.1 J | 2 J | 3.7 J | 3 J | 0.97 J | 1.5 J | 2.6 J | 1 J | 0.31 J | 1.3 J | 0.79 J | 0.021 J |
| SVOC | ISOPHORONE | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | NAPHTHALENE | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 0.22 J | 0.091 J | 0.17 J | 0.24 J | 0.18 J | 0.15 J | 0.14 J | 0.26 J | 0.072 J | 2.3 UJ | 0.081 J | 8.2 UJ | 0.01 J |
| SVOC | NITROBENZENE | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 2.3 UJ | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | PENTACHLOROPHENOL | MG/KG | | 3.1 U | 11 UJ | 13 UJ | 13 UJ | 9.1 UJ | 1.3 U | | 7.9 UJ | | 21 UJ | 17 UJ | 6.8 UJ | 5.1 UJ | 0.22 J | 0.41 J | 7.8 UJ | 5.6 UJ | 6.2 UJ | 20 UJ | 1.1 U |
| SVOC | PHENANTHRENE | MG/KG | | 0.54 J | 4.5 J | 4.7 J | 5.1 J | 2 J | 0.076 J | | 10 J | 3.4 J | 8 J | 13 J | 8.9 J | 2.2 J | 2.9 J | 6.3 J | 4.2 J | 0.73 J | 4.1 J | 2.4 J | 0.059 J |
| SVOC | PHENOL | MG/KG | | 1.3 U | 4.6 UJ | 5.2 UJ | 5.4 UJ | 3.8 UJ | 0.52 U | | 3.2 UJ | | 8.5 UJ | 6.9 UJ | 2.8 UJ | 2.1 UJ | 5.8 UJ | 6.4 UJ | 3.2 UJ | 0.5 J | 2.6 UJ | 8.2 UJ | 0.46 U |
| SVOC | PYRENE | MG/KG | | 0.86 J | 4.4 J | 4.5 J | 5.3 J | 1.8 J | 0.1 J | | 23 J | 5.9 J | 7.2 J | 24 J | 21 J | 4.9 J | 8.6 J | 13 J | 7.5 J | 1.3 J | 9.2 J | 4.9 J | 0.068 J |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHANE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHENE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | 0.0099 UJ | | | | | | | 0.0093 UJ | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMOETHANE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROETHANE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | 0.0099 U | | | | | | | 0.0093 UJ | | | | | | | | | | | | | |
| VOC | ACETONE | MG/KG | 0.01 U | | | | | | | 0.009 U | | | | | | | | | | | | | |
| VOC | BENZENE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | BROMOFORM | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | BROMOMETHANE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | CARBON DISULFIDE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | CARBON TETRACHLORIDE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | CHLOROBENZENE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | CHLOROETHANE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | CHLOROFORM | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | CHLOROMETHANE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | CYCLOHEXANE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | DICHLOROMETHANE | MG/KG | 0.01 U | | | | | | | 0.009 U | | | | | | | | | | | | | |
| VOC | ETHYLBENZENE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | ISOPROPYLBENZENE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | METHYL ACETATE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | METHYL ETHYL KETONE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | METHYLCYCLOHEXANE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | STYRENE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | TETRACHLOROETHENE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | TOLUENE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | VINYL CHLORIDE | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | 0.0099 U | | | | | | | 0.0093 U | | | | | | | | | | | | | |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCSB0027 | HCSB0027 | HCSB0028 | HCSB0029 | HCSB0030 | HCSB0031 | HCSB0032 | HCSB0032 | HCSB0033 | HCSB0034 | HCSB0035 | HCSB0036 | HCSB0037 | HCSB0038 | HCSB0039 | HCSB0040 | HCSB0040 | HCSB0041 | HCSB0042 | HCSB0043 | HCSB0044 |
| | | Field Sample ID | HCSB0027-SS-AC-AD-0 | HCSB0027-SS-AC-AD-1 | HCSB0028-SS-AA-AB-0 | HCSB0029-SS-AA-AB-0 | HCSB0030-SS-AA-AB-0 | HCSB0031-SS-AA-AE-0 | HCSB0032-SS-AA-AB-0 | HCSB0032-SS-AA-AB-1 | HCSB0033-SS-AA-AB-0 | HCSB0034-SS-AA-AB-0 | HCSB0035-SS-AA-AB-0 | HCSB0036-SS-AA-AB-0 | HCSB0037-SS-AA-AB-0 | HCSB0038-SS-AA-AB-0 | HCSB0039-SS-AA-AB-0 | HCSB0040-SS-AA-AB-0 | HCSB0040-SS-AA-AB-1 | HCSB0041-SS-AA-AB-0 | HCSB0042-SS-AA-AB-0 | HCSB0043-SS-AA-AD-0 | HCSB0044-SS-AA-AB-0 |
| | | Sample Date | 6/6/05 | 6/6/05 | 6/6/05 | 6/6/05 | 6/6/05 | 6/6/05 | 6/7/05 | 6/7/05 | 6/7/05 | 6/7/05 | 6/7/05 | 6/7/05 | 6/7/05 | 6/7/05 | 6/7/05 | 6/8/05 | 6/8/05 | 6/8/05 | 6/8/05 | 6/8/05 | 6/8/05 |
| | | Depth (ft) | 1-1.5 | 1-1.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-2 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-1.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | | 730 | 1570 | 2990 J | 1320 | 3830 J | 801 | 885 | 2350 J | 3970 | 8190 J | 892 | 1250 | 564 | 13900 J | 1710 | 1130 | 1710 | 1150 | 418 | 19300 J |
| METALS | ANTIMONY | MG/KG | | 2 J | 2.5 J | 4.8 J | 2.4 J | 1.9 UJ | 0.51 UJ | 0.5 UJ | 2.7 J | 1.5 J | 5.2 J | 0.51 UJ | 1.2 J | 0.5 UJ | 3.8 J | 0.52 UJ | 0.51 UJ | 0.5 UJ | 0.52 UJ | 0.51 UJ | 8.4 J |
| METALS | ARSENIC | MG/KG | | 13.9 | 80.5 | 196 | 68.6 | 101 J | 3.3 | 4.1 | 22.8 J | 50.3 | 306 J | 4.5 | 5.7 | 1.8 J | 1270 J | 57.8 J | 29 J | 84.7 J | 6.2 J | 1.1 J | 3060 J |
| METALS | BARIUM | MG/KG | | 56.6 | 318 | 633 | 209 | 364 J | 16.4 J | 17.8 J | 211 J | 237 | 1100 J | 14.4 J | 29.4 J | 4.2 J | 262 J | 18.9 J | 12.3 J | 21.8 J | 6.2 J | 3.8 J | 4940 J |
| METALS | BERYLLIUM | MG/KG | | 0.07 J | 0.14 J | 0.2 J | 0.14 J | 0.25 J | 0.098 J | 0.11 J | 0.32 J | 0.32 J | 0.64 J | 0.12 J | 0.15 J | 0.13 J | 0.87 J | 0.18 J | 0.14 J | 0.19 J | 0.15 J | 0.13 J | 1.5 J |
| METALS | CADMIUM | MG/KG | | 0.1 J | 0.43 J | 0.14 U | 0.23 J | 0.45 J | 0.15 J | 0.15 J | 3.6 J | 0.66 J | 1 J | 0.043 U | 0.093 J | 0.042 J | 0.33 J | 0.16 J | 0.15 J | 0.21 J | 0.044 U | 0.043 U | 5.8 J |
| METALS | CALCIUM | MG/KG | | 388 J | 1600 | 3640 | 1000 J | 2290 J | 303 J | 399 J | 9470 J | 1550 | 8380 J | 130 J | 180 J | 31.6 J | 3350 J | 401 J | 250 J | 1210 | 305 J | 39.1 J | 8920 J |
| METALS | CHROMIUM | MG/KG | | 167 | 100 J | 127 J | 43.3 J | 83.6 J | 3.3 | 3.4 | 37.5 J | 69.3 | 214 J | 9.5 | 10.8 | 4.9 | 1370 J | 28 | 13.5 | 52.3 | 4.2 | 4 | 2490 J |
| METALS | COBALT | MG/KG | | 0.25 U | 1.7 | 4.5 J | 1.9 J | 4 J | 1.1 J | 0.93 J | 1.5 J | 3.2 J | 6 J | 0.49 J | 0.75 J | 1.1 J | 3.5 J | 0.47 J | 0.55 J | 0.48 J | 0.83 J | 1.1 J | 12 J |
| METALS | COPPER | MG/KG | | 6.4 J | 30.8 | 50.6 J | 20.1 | 41.7 J | 8.5 J | 9 J | 249 J | 37.8 J | 86.3 J | 5.1 J | 12.5 J | 3.8 J | 214 J | 12.6 | 5.1 | 17 | 1.1 J | 1.6 J | 384 J |
| METALS | CYANIDE | MG/KG | | 13 J | 6.2 | 0.94 J | 0.1 U | 13.6 J | 0.34 J | 0.35 J | 6.7 J | 4 | 57.3 J | 0.98 | 0.47 J | 0.26 J | 49.3 J | 4.1 | 4.1 | 1.5 | 0.28 J | 0.39 J | 110 J |
| METALS | IRON | MG/KG | | 1360 | 12000 | 30600 | 10500 | 22100 J | 1400 | 1580 | 26700 J | 15500 | 48400 J | 3870 | 4480 | 1530 | 59600 J | 3060 | 2530 | 4510 | 1660 | 1500 | 74900 J |
| METALS | LEAD | MG/KG | | 217 | 580 | 920 | 330 | 609 J | 54.7 | 63.8 | 367 J | 455 | 1740 J | 97 | 154 | 38.1 | 5500 J | 367 | 210 | 330 | 6.8 | 9.3 | 19200 J |
| METALS | MAGNESIUM | MG/KG | | 73.2 J | 467 J | 712 J | 437 J | 484 J | 82.7 J | 99.6 J | 1460 J | 607 J | 1090 J | 128 J | 181 J | 102 J | 620 J | 72.6 J | 52.4 J | 68.6 J | 27.4 J | 68.8 J | 1080 J |
| METALS | MANGANESE | MG/KG | | 2.6 J | 95 | 931 J | 84.1 | 293 J | 17.4 | 14.9 | 120 J | 105 | 1030 J | 6.1 | 12.6 | 16.5 | 119 J | 8 | 6.7 | 4.2 | 10.4 | 15.3 | 691 J |
| METALS | MERCURY | MG/KG | | 0.11 J | 0.37 | 0.49 J | 0.23 | 0.52 J | 0.065 J | 0.19 | 0.47 J | 0.45 | 1.1 J | 0.14 | 0.25 | 0.044 J | 0.97 J | 0.78 | 0.0081 U | 0.067 J | 0.015 J | 0.031 J | 2.4 J |
| METALS | NICKEL | MG/KG | | 1 J | 3 J | 6.9 J | 2.8 J | 7.3 J | 1.5 J | 1.5 J | 5.7 J | 6.6 J | 13.3 J | 0.7 J | 2.1 J | 0.36 J | 8.4 J | 1 J | 0.68 J | 1.3 J | 0.37 J | 0.33 J | 21.5 J |
| METALS | POTASSIUM | MG/KG | | 138 J | 126 J | 213 J | 96.6 J | 206 J | 115 J | 141 J | 886 J | 340 J | 665 J | 265 J | 341 J | 215 J | 601 J | 80.6 J | 64.5 J | 91.2 J | 49.7 J | 139 J | 653 J |
| METALS | SELENIUM | MG/KG | | 1.2 U | 1.4 UJ | 1.6 U | 1.3 U | 1.9 UJ | 0.66 J | 0.69 J | 3.9 J | 1.7 J | 5.5 J | 0.68 J | 0.89 J | 0.32 UJ | 6.4 J | 0.5 J | 0.57 J | 0.39 J | 0.37 J | 0.46 J | 6.6 J |
| METALS | SILVER | MG/KG | | 0.2 U | 0.43 U | 0.49 U | 0.41 U | 0.6 UJ | 0.07 U | 0.081 J | 0.24 J | 0.34 J | 0.56 J | 0.094 J | 0.19 J | 0.076 U | 0.41 J | 0.08 U | 0.078 U | 0.077 U | 0.08 U | 0.078 U | 0.66 J |
| METALS | SODIUM | MG/KG | | 44.1 U | 259 | 246 J | 62.2 U | 174 J | 20.7 U | 20.2 U | 360 J | 138 J | 379 J | 20.5 U | 19.8 U | 20 U | 101 J | 21.1 U | 20.4 U | 20.1 U | 20.9 U | 20.4 U | 320 J |
| METALS | THALLIUM | MG/KG | | 1.2 U | 1.3 U | 1.4 U | 1.2 U | 1.8 UJ | 0.47 J | 0.42 U | 1.3 UJ | 0.41 U | 1.3 J | 0.43 U | 0.42 U | 0.42 U | 1.8 J | 0.71 J | 0.43 U | 0.42 U | 0.46 J | 0.49 J | 2.2 J |
| METALS | VANADIUM | MG/KG | | 4.5 J | 9 J | 18 | 8.5 J | 22 J | 11.2 | 10.5 | 19.2 J | 20.1 | 45.2 J | 8.4 J | 16.7 | 7.3 J | 51 J | 7.3 J | 7.3 J | 8.7 J | 4.2 J | 4.2 J | 63.8 J |
| METALS | ZINC | MG/KG | | 22 | 169 | 300 | 152 | 330 J | 12.8 | 14.6 | 248 J | 245 | 477 J | 10.7 | 23.8 | 5.1 | 119 J | 10 | 8.9 | 19.1 | 6.9 | 2.4 J | 1190 J |
| PEST/PCB | 4,4'-DDD | MG/KG | | R | 0.0051 U | 0.0065 J | 0.032 | 0.0071 UJ | 0.0054 U | 0.0058 U | 0.019 UJ | 0.03 | 0.026 J | 0.005 U | 0.0062 U | 0.0039 U | 0.011 U | 0.0047 U | 0.0043 U | 0.0049 U | 0.0041 U | 0.0038 U | 0.0088 J |
| PEST/PCB | 4,4'-DDE | MG/KG | | R | 0.0051 U | 0.0059 U | 0.005 U | 0.0071 UJ | 0.0033 J | 0.0038 J | 0.019 UJ | 0.01 | 0.032 J | 0.005 U | 0.013 | 0.0039 U | 0.0086 J | 0.0047 U | 0.0043 U | 0.0029 J | 0.0041 U | 0.0038 U | 0.019 J |
| PEST/PCB | 4,4'-DDT | MG/KG | | R | 0.0097 J | 0.0076 J | 0.005 U | 0.0071 UJ | 0.0054 U | 0.0044 J | 0.015 J | 0.026 J | 0.042 J | 0.005 U | 0.0088 | 0.0039 U | 0.016 J | 0.0047 U | 0.0043 U | 0.0053 | 0.0041 U | 0.0038 U | 0.03 J |
| PEST/PCB | ALDRIN | MG/KG | | R | 0.0026 U | 0.0031 U | 0.0026 U | 0.0036 UJ | 0.0028 J | 0.003 U | 0.01 UJ | 0.0031 U | 0.0073 UJ | 0.0026 U | 0.0032 U | 0.002 U | 0.0058 U | 0.0024 U | 0.0022 U | 0.0025 U | 0.0021 U | 0.002 U | 0.006 UJ |
| PEST/PCB | ALPHA-BHC | MG/KG | | R | 0.0026 U | 0.0031 U | 0.0026 U | 0.0036 UJ | 0.0028 U | 0.003 U | 0.01 UJ | 0.0031 U | 0.0073 UJ | 0.0026 U | 0.0032 U | 0.002 U | 0.0058 U | 0.0024 U | 0.0022 U | 0.0025 U | 0.0021 U | 0.002 U | 0.006 UJ |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | | R | 0.0026 U | 0.0047 J | 0.0048 J | R | 0.0028 U | 0.003 U | 0.01 UJ | 0.027 | 0.024 J | 0.0026 U | 0.0032 U | 0.002 U | 0.0058 U | 0.0024 U | 0.0022 U | 0.0025 U | 0.0021 U | 0.002 U | 0.006 UJ |
| PEST/PCB | AROCLOR-1016 | MG/KG | | R | 0.051 U | 0.059 U | 0.05 U | 0.071 UJ | 0.054 U | 0.058 U | 0.19 UJ | 0.061 U | 0.14 UJ | 0.05 U | 0.062 U | 0.039 U | 0.11 U | 0.047 U | 0.043 U | 0.049 U | 0.041 U | 0.038 U | 0.12 UJ |
| PEST/PCB | AROCLOR-1221 | MG/KG | | R | 0.1 U | 0.12 U | 0.1 U | 0.14 UJ | 0.11 U | 0.12 U | 0.4 UJ | 0.12 U | 0.29 UJ | 0.1 U | 0.13 U | 0.08 U | 0.23 U | 0.096 U | 0.087 U | 0.099 U | 0.083 U | 0.077 U | 0.24 UJ |
| PEST/PCB | AROCLOR-1232 | MG/KG | | R | 0.051 U | 0.059 U | 0.05 U | 0.071 UJ | 0.054 U | 0.058 U | 0.19 UJ | 0.061 U | 0.14 UJ | 0.05 U | 0.062 U | 0.039 U | 0.11 U | 0.047 U | 0.043 U | 0.049 U | 0.041 U | 0.038 U | 0.12 UJ |
| PEST/PCB | AROCLOR-1242 | MG/KG | | R | 0.051 U | 0.059 U | 0.05 U | 0.071 UJ | 0.054 U | 0.058 U | 0.19 UJ | 0.061 U | 0.14 UJ | 0.05 U | 0.062 U | 0.039 U | 0.11 U | 0.047 U | 0.043 U | 0.049 U | 0.041 U | 0.038 U | 0.12 UJ |
| PEST/PCB | AROCLOR-1248 | MG/KG | | R | 0.051 U | 0.059 U | 0.05 U | 0.071 UJ | 0.054 U | 0.058 U | 0.13 J | 0.061 U | 0.14 UJ | 0.05 U | 0.062 U | 0.039 U | 0.11 U | 0.047 U | 0.043 U | 0.049 U | 0.041 U | 0.038 U | 0.12 UJ |
| PEST/PCB | AROCLOR-1254 | MG/KG | | R | 0.051 U | 0.059 U | 0.05 U | 0.071 UJ | 0.054 U | 0.058 U | 0.19 UJ | 0.061 U | 0.14 UJ | 0.05 U | 0.062 U | 0.039 U | 0.11 U | 0.047 U | 0.043 U | 0.049 U | 0.041 U | 0.038 U | 0.12 UJ |
| PEST/PCB | AROCLOR-1260 | MG/KG | | R | 0.051 U | 0.059 U | 0.05 U | 0.55 J | 0.054 U | 0.058 U | 0.15 J | 0.43 | 0.28 J | 0.05 U | 0.062 U | 0.039 U | 0.11 U | 0.047 U | 0.043 U | 0.049 U | 0.041 U | 0.038 U | 0.48 J |
| PEST/PCB | BETA-BHC | MG/KG | | R | 0.0026 U | 0.0031 U | 0.0026 U | 0.0036 UJ | 0.0028 U | 0.003 U | 0.01 UJ | 0.0044 J | 0.0073 UJ | 0.0026 U | 0.0032 U | 0.002 U | 0.0058 U | 0.0024 U | 0.0022 U | 0.0025 U | 0.0021 U | 0.002 U | 0.006 UJ |
| PEST/PCB | DELTA-BHC | MG/KG | | R | 0.0026 U | 0.0031 U | 0.0026 U | 0.0036 UJ | 0.0028 U | 0.003 U | 0.01 UJ | 0.0031 U | 0.0073 UJ | 0.0026 U | 0.0032 U | 0.002 U | 0.0058 U | 0.0024 U | 0.0022 U | 0.0025 U | 0.0021 U | 0.002 U | 0.006 UJ |
| PEST/PCB | DIELDRIN | MG/KG | | R | 0.0051 U | 0.0059 U | 0.005 U | 0.013 J | 0.0054 U | 0.0058 U | 0.019 UJ | 0.0061 U | 0.014 UJ | 0.005 U | 0.0062 U | 0.0039 U | 0.011 U | 0.0047 U | 0.0043 U | 0.0049 U | 0.0041 U | 0.0038 U | 0.012 UJ |
| PEST/PCB | ENDOSULFAN I | MG/KG | | R | 0.0026 U | 0.0031 U | 0.0026 U | 0.0036 UJ | 0.0028 U | 0.003 U | 0.01 UJ | 0.0031 U | 0.0073 UJ | 0.0026 U | 0.0032 U | 0.002 U | 0.0058 U | 0.0024 U | 0.0022 U | 0.0025 U | 0.0021 U | 0.002 U | 0.006 UJ |
| PEST/PCB | ENDOSULFAN II | MG/KG | | R | 0.0051 U | 0.0059 U | 0.005 U | 0.0071 UJ | 0.0054 U | 0.0058 U | 0.019 UJ | 0.014 J | 0.025 J | 0.005 U | 0.0062 U | 0.0039 U | 0.011 U | 0.0047 U | 0.0043 U | 0.0049 U | 0.0041 U | 0.0038 U | 0.012 J |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | | R | 0.0051 U | 0.0082 J | 0.005 U | 0.0071 UJ | 0.0054 U | 0.0058 U | 0.019 UJ | 0.0061 U | 0.013 J | 0.005 U | 0.0062 U | 0.0039 U | 0.011 U | 0.0047 U | 0.0043 U | 0.0049 U | 0.0041 U | 0.0038 U | 0.012 UJ |
| PEST/PCB | ENDRIN | MG/KG | | R | 0.0051 U | 0.0059 U | 0.005 U | R | 0.0054 U | 0.0058 U | 0.019 UJ | R | R | 0.005 U | 0.0062 U | 0.0039 U | 0.011 U | 0.0047 U | 0.0043 U | 0.0049 U | 0.0041 U | 0.0038 U | R |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | | R | 0.0051 U | 0.0068 | 0.005 U | 0.031 J | 0.0054 U | 0.0058 U | 0.019 UJ | 0.022 | 0.014 UJ | 0.005 U | 0.0062 U | 0.0039 U | 0.011 U | 0.0047 U | 0.0043 U | 0.0049 U | 0.0041 U | 0.0038 U | 0.012 UJ |
| PEST/PCB | ENDRIN KETONE | MG/KG | | R | 0.0051 U | 0.0059 U | 0.005 U | 0.0071 UJ | 0.0054 U | 0.0058 U | 0.019 UJ | 0.0061 U | 0.014 UJ | 0.005 U | 0.0062 U | 0.0039 U | 0.011 U | 0.0047 U | 0.0043 U | 0.0049 U | 0.0041 U | 0.0038 U | 0.012 UJ |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | | R | 0.0026 U | 0.0031 U | 0.0026 U | 0.0036 UJ | 0.0028 U | 0.003 U | 0.01 UJ | 0.0031 U | 0.0073 UJ | 0.0026 U | 0.0032 U | 0.002 U | 0.0058 U | 0.0024 U | 0.0022 U | 0.0025 U | 0.0021 U | 0.002 U | 0.006 UJ |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | | R | 0.0026 U | 0.0034 | 0.005 | 0.011 J | 0.0028 U | 0.003 U | 0.01 UJ | 0.025 | 0.021 J | 0.0026 U | 0.0032 U | 0.002 U | 0.0058 U | 0.0024 U | 0.0022 U | 0.0025 U | 0.0021 U | 0.002 U | 0.006 UJ |
| PEST/PCB | HEPTACHLOR | MG/KG | | R | 0.0026 U | 0.0031 U | 0.0026 U | 0.0036 UJ | 0.0028 U | 0.003 U | 0.01 UJ | 0.0031 U | 0.0073 UJ | 0.0026 U | 0.0032 U | 0.002 U | 0.0058 U | 0.0024 U | 0.0022 U | 0.0025 U | 0.0021 U | 0.002 U | 0.006 UJ |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | | R | 0.0026 U | 0.0031 U | 0.0026 U | 0.0036 UJ | 0.0028 U | 0.003 U | 0.01 UJ | 0.0031 U | 0.0073 UJ | 0.0026 U | 0.0032 U | 0.002 U | 0.0058 U | 0.0024 U | 0.0022 U | 0.0025 U | 0.0021 U | 0.002 U | 0.006 UJ |
| PEST/PCB | METHOXYCHLOR | MG/KG | | R | 0.026 U | 0.031 U | 0.026 U | 0.036 UJ | 0.028 U | 0.03 U | 0.1 UJ | 0.031 U | 0.073 UJ | 0.026 U | 0.032 U | 0.02 U | 0.058 U | 0.024 U | 0.022 U | 0.025 U | 0.021 U | 0.02 U | 0.06 UJ |
| PEST/PCB | TOXAPHENE | MG/KG | | R | 0.26 U | 0.31 U | 0.26 U | 0.36 UJ | 0.28 U | 0.3 U | 1 UJ | 0.31 U | 0.73 UJ | 0.26 U | 0.32 U | 0.2 U | 0.58 U | 0.24 U | 0.22 U | 0.25 U | 0.21 U | 0.2 U | 0.6 UJ |
| SVOC | 1,1'-BIPHENYL | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.023 J | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | | R | 2.6 UJ | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | | R | 6.2 U | 12 U | 1.2 U | 1.7 UJ | 1.4 U | 1.5 U | 4.9 UJ | 1.5 U | 3.6 UJ | 1.2 U | 1.6 U | 0.99 U | 2.9 UJ | 1.2 U | 1.1 U | 1.2 U | 1 U | 0.95 U | 2.9 UJ |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | 2,4-DINITROPHENOL | MG/KG | | R | 6.2 U | 12 U | 1.2 U | 1.7 UJ | 1.4 U | 1.5 U | 4.9 UJ | 1.5 U | 3.6 UJ | 1.2 U | 1.6 U | 0.99 U | 2.9 UJ | 1.2 U | 1.1 U | 1.2 U | 1 U | 0.95 U | 2.9 UJ |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | 2-CHLOROPHENOL | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | | R | 0.03 J | 0.16 J | 0.021 J | 0.041 J | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | 2-METHYLPHENOL | MG/KG | | R | 2.6 UJ | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | 2-NITROANILINE | MG/KG | | R | 6.2 U | 12 U | 1.2 U | 1.7 UJ | 1.4 U | 1.5 U | 4.9 UJ | 1.5 U | 3.6 UJ | 1.2 U | 1.6 U | 0.99 U | 2.9 UJ | 1.2 U | 1.1 U | 1.2 U | 1 U | 0.95 U | 2.9 UJ |
| SVOC | 2-NITROPHENOL | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | 3-NITROANILINE | MG/KG | | R | 6.2 U | 12 U | 1.2 U | 1.7 UJ | 1.4 U | 1.5 U | 4.9 UJ | 1.5 U | 3.6 UJ | 1.2 U | 1.6 U | 0.99 U | 2.9 UJ | 1.2 U | 1.1 U | 1.2 U | 1 U | 0.95 U | 2.9 UJ |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | | R | 6.2 U | 12 U | 1.2 U | 1.7 UJ | 1.4 U | 1.5 U | 4.9 UJ | 1.5 U | 3.6 UJ | 1.2 U | 1.6 U | 0.99 U | 2.9 UJ | 1.2 U | 1.1 U | 1.2 U | 1 U | 0.95 U | 2.9 UJ |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | 4-CHLOROANILINE | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | 4-METHYLPHENOL | MG/KG | | R | 2.6 UJ | 4.8 U | 0.5 U | 0.034 J | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | 4-NITROANILINE | MG/KG | | R | 6.2 U | 12 U | 1.2 U | 1.7 UJ | 1.4 U | 1.5 U | 4.9 UJ | 1.5 U | 3.6 UJ | 1.2 U | 1.6 U | 0.99 U | 2.9 UJ | 1.2 U | 1.1 U | 1.2 U | 1 U | 0.95 U | 2.9 UJ |
| SVOC | 4-NITROPHENOL | MG/KG | | R | 6.2 UJ | 12 U | 1.2 U | 1.7 UJ | 1.4 U | 1.5 U | 4.9 UJ | 1.5 U | 3.6 UJ | 1.2 U | 1.6 U | 0.99 U | 2.9 UJ | 1.2 U | 1.1 U | 1.2 U | 1 U | 0.95 U | 2.9 UJ |
| SVOC | ACENAPHTHENE | MG/KG | | R | 0.17 J | 0.68 J | 0.16 J | 0.21 J | 0.54 U | 0.58 U | 1.9 UJ | 0.12 J | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | ACENAPHTHYLENE | MG/KG | | R | 0.06 J | 0.28 J | 0.5 U | 0.073 J | 0.54 U | 0.58 U | 1.9 UJ | 0.095 J | 0.17 J | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | ACETOPHENONE | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | ANTHRACENE | MG/KG | | R | 0.36 J | 1.5 J | 0.21 J | 0.42 J | 0.54 U | 0.58 U | 1.9 UJ | 0.29 J | 0.35 J | 0.5 U | 0.62 U | 0.39 U | 0.12 J | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 0.12 J |
| SVOC | ATRAZINE | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 UJ | 0.58 UJ | 1.9 UJ | 0.61 UJ | 1.4 UJ | 0.5 UJ | 0.62 UJ | 0.39 UJ | 1.1 UJ | 0.47 UJ | 0.43 UJ | 0.49 UJ | 0.41 U | 0.38 UJ | 1.2 UJ |
| SVOC | BENZALDEHYDE | MG/KG | | R | 2.6 UJ | 4.8 U | 0.5 U | 0.71 UJ | 0.54 UJ | 0.58 UJ | 1.9 UJ | 0.11 J | 0.26 J | 0.5 UJ | 0.063 J | 0.39 UJ | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | | 0.058 J | 2.2 J | 6.2 | 0.72 | 1.6 J | 0.54 U | 0.58 U | 0.21 J | 1 | 1.8 J | 0.5 U | 0.096 J | 0.39 U | 0.43 J | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 0.57 J |
| SVOC | BENZO(A)PYRENE | MG/KG | | 0.078 J | 3.2 | 7.7 | 0.88 | 1.8 J | 0.54 U | 0.58 U | 0.31 J | 1.1 | 2.6 J | 0.5 U | 0.098 J | 0.39 U | 0.51 J | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 0.64 J |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | | 0.1 J | 4.5 | 10 | 1.1 | 2.3 J | 0.54 U | 0.079 J | 0.49 J | 1.4 | 4.3 J | 0.5 U | 0.18 J | 0.39 U | 0.67 J | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 0.91 J |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCSB0027 | HCSB0027 | HCSB0028 | HCSB0029 | HCSB0030 | HCSB0031 | HCSB0032 | HCSB0032 | HCSB0033 | HCSB0034 | HCSB0035 | HCSB0036 | HCSB0037 | HCSB0038 | HCSB0039 | HCSB0040 | HCSB0040 | HCSB0041 | HCSB0042 | HCSB0043 | HCSB0044 |
| | | Field Sample ID | HCSB0027-SS-AC-AD-0 | HCSB0027-SS-AC-AD-1 | HCSB0028-SS-AA-AB-0 | HCSB0029-SS-AA-AB-0 | HCSB0030-SS-AA-AB-0 | HCSB0031-SS-AA-AE-0 | HCSB0032-SS-AA-AB-0 | HCSB0032-SS-AA-AB-1 | HCSB0033-SS-AA-AB-0 | HCSB0034-SS-AA-AB-0 | HCSB0035-SS-AA-AB-0 | HCSB0036-SS-AA-AB-0 | HCSB0037-SS-AA-AB-0 | HCSB0038-SS-AA-AB-0 | HCSB0039-SS-AA-AB-0 | HCSB0040-SS-AA-AB-0 | HCSB0040-SS-AA-AB-1 | HCSB0041-SS-AA-AB-0 | HCSB0042-SS-AA-AB-0 | HCSB0043-SS-AA-AD-0 | HCSB0044-SS-AA-AB-0 |
| | | Sample Date | 6/6/05 | 6/6/05 | 6/6/05 | 6/6/05 | 6/6/05 | 6/6/05 | 6/7/05 | 6/7/05 | 6/7/05 | 6/7/05 | 6/7/05 | 6/7/05 | 6/7/05 | 6/7/05 | 6/7/05 | 6/8/05 | 6/8/05 | 6/8/05 | 6/8/05 | 6/8/05 | 6/8/05 |
| | | Depth (ft) | 1-1.5 | 1-1.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-2 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-1.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | | R | 1 J | 2.8 J | 0.3 J | 0.69 J | 0.54 U | 0.58 U | 0.24 J | 0.83 | 2.3 J | 0.5 U | 0.1 J | 0.39 U | 0.36 J | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 0.44 J |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | | 0.066 J | 4.1 | 9.8 | 1.2 | 2.2 J | 0.54 U | 0.58 U | 1.9 UJ | 0.52 J | 1.1 J | 0.5 U | 0.071 J | 0.39 U | 0.25 J | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 0.29 J |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | | R | 0.46 J | 4.8 U | 0.16 J | 0.5 J | 0.54 U | 0.58 U | 1.9 UJ | 1.1 | 0.55 J | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | CAPROLACTAM | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.082 J | 0.27 J | 0.099 J | 0.36 J | 0.5 U | 0.13 J | 0.055 J | 0.15 J | 0.47 U | 0.073 J | 0.49 U | 0.41 U | 0.38 U | 0.24 J |
| SVOC | CARBAZOLE | MG/KG | | R | 0.41 J | 1.4 J | 0.16 J | 0.31 J | 0.54 U | 0.58 U | 1.9 UJ | 0.15 J | 0.31 J | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | CHRYSENE | MG/KG | | 0.11 J | 3.7 | 8.9 | 1 | 2 J | 0.54 U | 0.58 U | 0.34 J | 1.1 | 2.7 J | 0.5 U | 0.14 J | 0.39 U | 0.54 J | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 0.73 J |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | | R | 0.39 J | 1.4 J | 0.12 J | 0.26 J | 0.54 U | 0.58 U | 1.9 UJ | 0.2 J | 0.57 J | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | DIBENZOFURAN | MG/KG | | R | 0.078 J | 0.46 J | 0.058 J | 0.096 J | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | DIETHYLPHTHALATE | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | DIMETHYLPHTHALATE | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | FLUORANTHENE | MG/KG | | 0.14 J | 7.5 | 20 | 2.4 | 4.4 J | 0.059 J | 0.14 J | 0.63 J | 2.5 | 5.5 J | 0.5 U | 0.3 J | 0.39 U | 1.1 J | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.4 J |
| SVOC | FLUORENE | MG/KG | | R | 0.15 J | 0.76 J | 0.1 J | 0.2 J | 0.54 U | 0.58 U | 1.9 UJ | 0.11 J | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | HEXACHLOROBENZENE | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 UJ | 0.58 UJ | 1.9 UJ | 0.61 UJ | 1.4 UJ | 0.5 UJ | 0.62 UJ | 0.39 UJ | 1.1 UJ | 0.47 UJ | 0.43 UJ | 0.49 UJ | 0.41 U | 0.38 UJ | 1.2 UJ |
| SVOC | HEXACHLOROETHANE | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | | R | 1.2 J | 3.2 J | 0.34 J | 0.77 J | 0.54 U | 0.58 U | 1.9 UJ | 0.87 | 2.4 J | 0.5 U | 0.1 J | 0.39 U | 0.38 J | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 0.49 J |
| SVOC | ISOPHORONE | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | NAPHTHALENE | MG/KG | | R | 0.044 J | 0.38 J | 0.051 J | 0.062 J | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | NITROBENZENE | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 U | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | PENTACHLOROPHENOL | MG/KG | | R | 0.12 J | 0.2 J | 0.09 J | 0.23 J | 1.4 U | 1.5 U | 4.9 UJ | 0.56 J | 3.6 UJ | 1.2 U | 1.6 U | 0.99 U | 2.9 UJ | 1.2 U | 1.1 U | 1.2 U | 1 U | 0.95 U | 2.9 UJ |
| SVOC | PHENANTHRENE | MG/KG | | 0.097 J | 2.5 J | 7.8 | 0.94 | 1.8 J | 0.54 U | 0.078 J | 0.24 J | 1.1 | 1.5 J | 0.5 U | 0.15 J | 0.39 U | 0.45 J | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 0.53 J |
| SVOC | PHENOL | MG/KG | | R | 2.6 U | 4.8 U | 0.5 U | 0.71 UJ | 0.54 U | 0.58 U | 1.9 UJ | 0.61 U | 1.4 UJ | 0.5 U | 0.62 U | 0.39 U | 1.1 UJ | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 1.2 UJ |
| SVOC | PYRENE | MG/KG | | 0.16 J | 3.2 J | 12 | 1.3 | 3.8 J | 0.54 U | 0.097 J | 0.44 J | 1.3 | 2.8 J | 0.5 U | 0.19 J | 0.39 U | 0.71 J | 0.47 U | 0.43 U | 0.49 U | 0.41 U | 0.38 U | 0.88 J |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | 1,1-DICHLOROETHANE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | 1,1-DICHLOROETHENE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | 0.01 UJ | 0.014 UJ | | | | | | | | R | | | | | | | | | | R | |
| VOC | 1,2-DIBROMOETHANE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | 1,2-DICHLOROETHANE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | 2-HEXANONE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | ACETONE | MG/KG | 0.024 U | 0.025 U | | | | | | | | 0.054 UJ | | | | | | | | | | 0.0094 U | |
| VOC | BENZENE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | BROMODICHLOROMETHANE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | BROMOFORM | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | BROMOMETHANE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | CARBON DISULFIDE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | CARBON TETRACHLORIDE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | CHLOROBENZENE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | CHLOROETHANE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | CHLOROFORM | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | CHLOROMETHANE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | CYCLOHEXANE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | DICHLOROMETHANE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.0047 J | | | | | | | | | | 0.0015 J | |
| VOC | ETHYLBENZENE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | ISOPROPYLBENZENE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | METHYL ACETATE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | METHYL ETHYL KETONE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.015 J | | | | | | | | | | 0.0094 U | |
| VOC | METHYLCYCLOHEXANE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | STYRENE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | TETRACHLOROETHENE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | TOLUENE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | VINYL CHLORIDE | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |
| VOC | XYLENES (TOTAL) | MG/KG | 0.01 U | 0.014 U | | | | | | | | 0.021 U | | | | | | | | | | 0.0094 U | |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCSB0045 | HCSB0046 | HCSB0047 | HCSB0048 | HCSB0049 | HCSB0050 | HCSB0051 | HCSB0052 | HCSB0053 | HCSB0054 | HCSB0055 | HCSB0056 | HCSB0057 | HCSB0058 | HCSB0059 | HCSB0059 | HCSB0060 | HCSB0061 | HCSB0062 | HCSB0063 | HCSB0064 |
| | | Field Sample ID | HCSB0045-SS-AA-AB-0 | HCSB0046-SS-AA-AB-0 | HCSB0047-SS-AA-AB-0 | HCSB0048-SS-AA-AB-0 | HCSB0049-SS-AA-AB-0 | HCSB0050-SS-AA-AB-0 | HCSB0051-SS-AA-AB-0 | HCSB0052-SS-AA-AD-0 | HCSB0053-SS-AA-AD-0 | HCSB0054-SS-AA-AD-0 | HCSB0055-SS-AA-AB-0 | HCSB0056-SS-AA-AB-0 | HCSB0057-SS-AA-AB-0 | HCSB0058-SS-AA-AB-0 | HCSB0059-SS-AA-AB-0 | HCSB0059-SS-AA-AB-1 | HCSB0060-SS-AA-AB-0 | HCSB0061-SS-AA-AB-0 | HCSB0062-SS-AA-AB-0 | HCSB0063-SS-AA-AB-0 | HCSB0064-SS-AA-AB-0 |
| | | Sample Date | 6/8/05 | 6/8/05 | 6/8/05 | 6/8/05 | 6/8/05 | 6/8/05 | 6/8/05 | 6/8/05 | 6/8/05 | 6/8/05 | 6/9/05 | 6/9/05 | 6/9/05 | 6/9/05 | 6/9/05 | 6/9/05 | 6/9/05 | 6/9/05 | 6/9/05 | 6/9/05 | 6/9/05 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-1.5 | 0-1.5 | 0-1.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 16400 J | 9620 | 9770 J | 12200 J | 10400 J | 13700 J | 16100 J | 859 | 303 | 4350 J | 40700 J | 52100 J | 33900 J | 35100 J | 2600 J | 2430 J | 23600 J | 22700 J | 22700 J | 21200 J | 19300 J |
| METALS | ANTIMONY | MG/KG | 8.2 J | 4.8 J | 3 J | 10.3 J | 8.7 J | 22.8 J | 0.95 UJ | 0.49 UJ | 0.5 UJ | 0.57 UJ | 2.1 UJ | 2.5 UJ | 2.1 UJ | 2.8 UJ | 1 UJ | 0.94 UJ | 3.6 J | 1.9 J | 3.2 J | 3 J | 1.9 UJ |
| METALS | ARSENIC | MG/KG | 1450 J | 546 J | 368 J | 2060 J | 1320 J | 1300 J | 1880 J | 2.1 J | 0.87 J | 3.3 J | 437 J | 375 J | 477 J | 103 J | 5.5 J | 5 J | 3130 J | 1430 J | 2200 J | 1650 J | 707 J |
| METALS | BARIUM | MG/KG | 7710 J | 6400 | 6700 J | 7590 J | 7150 J | 5860 J | 13600 J | 5.6 J | 5.1 J | 25.8 J | 4150 J | 1310 J | 1590 J | 699 J | 10.9 J | 10.5 J | 4320 J | 4310 J | 3670 J | 9140 J | 4920 J |
| METALS | BERYLLIUM | MG/KG | 1.1 J | 0.66 J | 0.71 J | 0.84 J | 0.79 J | 1.1 J | 1.2 J | 0.14 J | 0.13 J | 0.26 J | 3.4 J | 3.5 J | 2.2 J | 2.4 J | 0.34 J | 0.31 J | 2.1 J | 2 J | 1.9 J | 2.3 J | 1.9 J |
| METALS | CADMIUM | MG/KG | 4.2 J | 3.8 | 2.8 J | 3.5 J | 2.6 J | 2.6 J | 3.4 J | 0.051 J | 0.12 J | 5.8 J | 3.6 J | 1.6 J | 0.42 J | 4.1 J | 0.089 J | 0.08 UJ | 4.8 J | 4.3 J | 2.8 J | 7.3 J | 6.4 J |
| METALS | CALCIUM | MG/KG | 5930 J | 4580 | 6540 J | 2520 J | 3300 J | 3830 J | 1370 J | 27.4 J | 21 J | 3000 J | 5660 J | 3300 J | 1630 J | 9890 J | 129 J | 115 J | 10400 J | 10700 J | 8480 J | 14500 J | 19600 J |
| METALS | CHROMIUM | MG/KG | 2220 J | 1150 | 1010 J | 1840 J | 1340 J | 1380 J | 2370 J | 6.2 | 2.5 | 7.1 J | 2280 J | 2200 J | 696 J | 1210 J | 6.4 J | 6.5 J | 1500 J | 1500 J | 1290 J | 1220 J | 1150 J |
| METALS | COBALT | MG/KG | 7.7 J | 2.4 J | 6.2 J | 3.3 J | 4.7 J | 12.5 J | 0.15 J | 1.5 J | 2.4 J | 0.77 J | 5.1 J | 5.1 J | 3.3 J | 5.8 J | 0.45 J | 0.57 J | 47.6 J | 43.1 J | 38.7 J | 13.8 J | 18.8 J |
| METALS | COPPER | MG/KG | 235 J | 156 | 138 J | 272 J | 164 J | 172 J | 511 UJ | 2.8 J | 2.8 J | 62.4 J | 278 J | 211 J | 112 J | 167 J | 8.8 J | 8 J | 300 J | 266 J | 254 J | 237 J | 237 J |
| METALS | CYANIDE | MG/KG | 238 J | 150 | 67.4 J | 227 J | 144 J | 66 J | 97.6 J | 0.75 | 0.28 J | 0.74 J | 89 J | 32.1 J | 40.6 J | 38 J | 0.47 J | 7.1 J | 22.6 J | 101 J | 114 J | 59.4 J | 46.6 J |
| METALS | IRON | MG/KG | 62800 J | 37700 | 43800 J | 53600 J | 49100 J | 61100 J | 34300 J | 1020 | 900 | 2330 J | 36000 J | 42300 J | 48700 J | 11600 J | 6450 J | 5010 J | 194000 J | 139000 J | 155000 J | 108000 J | 88500 J |
| METALS | LEAD | MG/KG | 12900 J | 9460 | 9690 J | 13700 J | 13600 J | 10200 J | 41800 J | 32.1 | 7.9 | 66 J | 5940 J | 3230 J | 2400 J | 5070 J | 47.9 J | 43.8 J | 6150 J | 5970 J | 4920 J | 4500 J | 4960 J |
| METALS | MAGNESIUM | MG/KG | 1180 J | 847 J | 1160 J | 738 J | 751 J | 925 J | 591 J | 19.2 J | 12.8 J | 238 J | 1410 J | 1280 J | 1030 J | 1170 J | 80.9 J | 74.1 J | 1530 J | 1730 J | 1590 J | 1750 J | 2220 J |
| METALS | MANGANESE | MG/KG | 644 J | 327 | 1070 J | 215 J | 528 J | 563 J | 97.6 J | 26.7 | 36.6 | 28.2 J | 89.8 J | 120 J | 182 J | 123 J | 7.9 J | 7.9 J | 2510 J | 3910 J | 2260 J | 636 J | 2440 J |
| METALS | MERCURY | MG/KG | 3.1 J | 1.3 | 2.1 J | 1.1 J | 1.5 J | 1.6 J | 2.1 J | 0.0079 U | 0.031 J | 0.071 J | 1.8 J | 1.4 J | 1.1 J | 1.3 J | 0.1 J | 0.094 J | 1.9 J | 2.2 J | 1.6 J | 1.7 J | 1.4 J |
| METALS | NICKEL | MG/KG | 19.3 J | 12.7 | 13.5 J | 15.1 J | 11.8 J | 13.8 J | 10.6 J | 0.17 J | 0.26 J | 3.1 J | 34 J | 27.3 J | 15.9 J | 33 J | 2 J | 1.9 J | 40.9 J | 38.3 J | 39.2 J | 34.1 J | 34.2 J |
| METALS | POTASSIUM | MG/KG | 646 J | 526 J | 552 J | 432 J | 417 J | 483 J | 554 J | 45.9 J | 40.3 J | 107 J | 906 J | 831 J | 854 J | 746 J | 163 J | 153 J | 905 J | 862 J | 931 J | 1150 J | 1100 J |
| METALS | SELENIUM | MG/KG | 5.6 J | 3.4 J | 3.9 J | 5.7 J | 4.8 J | 6 J | 6.7 J | 0.32 UJ | 0.33 UJ | 1.3 J | 6.7 J | 7.6 J | 6.6 J | 6.6 J | 1.8 J | 1.6 J | 12.7 J | 10.4 J | 12.1 J | 11.2 J | 9.3 J |
| METALS | SILVER | MG/KG | 1 J | 0.75 J | 0.91 J | 0.72 J | 0.72 J | 0.66 J | 0.72 J | 0.076 U | 0.077 U | 0.12 J | 0.65 J | 0.84 J | 0.33 UJ | 0.69 J | 0.15 UJ | 0.14 UJ | 2.1 J | 1.7 J | 1.7 J | 1.5 J | 1.4 J |
| METALS | SODIUM | MG/KG | 252 J | 237 J | 394 J | 240 J | 170 J | 213 J | 80.2 J | 19.8 U | 20.1 U | 22.9 UJ | 146 J | 249 J | 143 J | 115 UJ | 40.6 UJ | 62.1 J | 249 J | 359 J | 350 J | 299 J | 561 J |
| METALS | THALLIUM | MG/KG | 2 J | 1.3 J | 1.5 J | 1.5 J | 1.4 J | 1.5 J | 3.6 J | 0.42 U | 0.58 J | 0.48 UJ | 2.2 J | 2.1 UJ | 1.8 UJ | 2.4 UJ | 0.85 UJ | 0.8 UJ | 3 J | 4.3 J | 3.3 J | 2.2 UJ | 2.1 J |
| METALS | VANADIUM | MG/KG | 68.2 J | 42.5 | 45.9 J | 57.2 J | 40.4 J | 48.6 J | 49.9 J | 5.2 J | 4.8 J | 8.2 J | 97.6 J | 89.1 J | 56.9 J | 69.8 J | 12.8 J | 11.7 J | 114 J | 99.2 J | 97.9 J | 89.7 J | 76.2 J |
| METALS | ZINC | MG/KG | 1330 J | 835 | 836 J | 804 J | 779 J | 1020 J | 665 J | 2.7 J | 3.2 J | 139 J | 991 J | 479 J | 267 J | 609 J | 10.3 J | 9.2 J | 1830 J | 1670 J | 1530 J | 1580 J | 1370 J |
| PEST/PCB | 4,4'-DDD | MG/KG | 0.043 J | 0.012 J | 0.023 J | 0.027 J | 0.017 J | 0.015 J | 0.013 J | 0.0045 UJ | 0.004 U | 0.0072 UJ | 0.039 J | 0.029 J | 0.01 J | 0.02 J | 0.0077 UJ | 0.0072 UJ | 0.042 J | 0.025 J | 0.037 J | 0.053 J | 0.018 J |
| PEST/PCB | 4,4'-DDE | MG/KG | 0.065 J | 0.019 | 0.02 J | 0.056 J | 0.027 J | 0.048 J | 0.045 J | 0.0045 UJ | 0.004 U | 0.0051 J | 0.048 J | 0.028 J | 0.014 J | 0.029 J | 0.0077 UJ | 0.0072 UJ | 0.03 J | 0.016 J | 0.026 J | 0.032 J | 0.021 J |
| PEST/PCB | 4,4'-DDT | MG/KG | 0.088 J | 0.053 J | 0.084 J | 0.059 J | 0.066 J | 0.048 J | 0.021 J | 0.0045 UJ | 0.004 U | 0.0072 UJ | 0.038 J | 0.025 J | 0.018 J | 0.022 UJ | 0.0077 UJ | 0.0072 UJ | 0.051 J | 0.053 J | 0.054 J | 0.086 J | 0.047 J |
| PEST/PCB | ALDRIN | MG/KG | 0.004 UJ | 0.0033 U | 0.0039 UJ | 0.0041 UJ | 0.0037 UJ | 0.0038 UJ | 0.0062 UJ | 0.0023 UJ | 0.002 U | 0.0037 UJ | 0.0083 UJ | 0.0098 UJ | 0.0084 UJ | 0.011 UJ | 0.0039 UJ | 0.0037 UJ | 0.0051 UJ | 0.0048 UJ | 0.0055 UJ | 0.01 UJ | 0.0074 UJ |
| PEST/PCB | ALPHA-BHC | MG/KG | 0.004 UJ | 0.0033 U | 0.0039 UJ | 0.0041 UJ | 0.0037 UJ | 0.0038 UJ | 0.0062 UJ | 0.0023 UJ | 0.002 U | 0.0037 UJ | 0.0083 UJ | 0.0098 UJ | 0.0084 UJ | 0.011 UJ | 0.0039 UJ | 0.0037 UJ | 0.0051 UJ | 0.0048 UJ | 0.0055 UJ | 0.01 UJ | 0.0074 UJ |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | 0.0079 J | 0.011 J | 0.011 J | 0.0082 J | 0.0071 J | 0.0028 J | 0.0062 UJ | 0.0023 UJ | 0.002 U | 0.0037 UJ | 0.017 J | 0.013 J | 0.0084 UJ | 0.0077 J | 0.0039 UJ | 0.0037 UJ | 0.026 J | 0.012 J | 0.024 J | 0.033 J | 0.01 J |
| PEST/PCB | AROCLOR-1016 | MG/KG | 0.077 UJ | 0.064 U | 0.076 UJ | 0.081 UJ | 0.071 UJ | 0.074 UJ | 0.12 UJ | 0.045 UJ | 0.04 U | 0.072 UJ | 0.16 UJ | 0.19 UJ | 0.16 UJ | 0.22 UJ | 0.077 UJ | 0.072 UJ | 0.1 UJ | 0.092 UJ | 0.11 UJ | 0.2 UJ | 0.14 UJ |
| PEST/PCB | AROCLOR-1221 | MG/KG | 0.16 UJ | 0.13 U | 0.15 UJ | 0.16 UJ | 0.14 UJ | 0.15 UJ | 0.24 UJ | 0.09 UJ | 0.08 U | 0.15 UJ | 0.33 UJ | 0.39 UJ | 0.33 UJ | 0.44 UJ | 0.16 UJ | 0.15 UJ | 0.2 UJ | 0.19 UJ | 0.22 UJ | 0.4 UJ | 0.29 UJ |
| PEST/PCB | AROCLOR-1232 | MG/KG | 0.077 UJ | 0.064 U | 0.076 UJ | 0.081 UJ | 0.071 UJ | 0.074 UJ | 0.12 UJ | 0.045 UJ | 0.04 U | 0.072 UJ | 0.16 UJ | 0.19 UJ | 0.16 UJ | 0.22 UJ | 0.077 UJ | 0.072 UJ | 0.1 UJ | 0.092 UJ | 0.11 UJ | 0.2 UJ | 0.14 UJ |
| PEST/PCB | AROCLOR-1242 | MG/KG | 0.077 UJ | 0.064 U | 0.076 UJ | 0.081 UJ | 0.071 UJ | 0.074 UJ | 0.12 UJ | 0.045 UJ | 0.04 U | 0.072 UJ | 0.16 UJ | 0.19 UJ | 0.16 UJ | 0.22 UJ | 0.077 UJ | 0.072 UJ | 0.1 UJ | 0.092 UJ | 0.11 UJ | 0.2 UJ | 0.14 UJ |
| PEST/PCB | AROCLOR-1248 | MG/KG | 0.077 UJ | 0.064 U | 0.076 UJ | 0.081 UJ | 0.071 UJ | 0.074 UJ | 0.12 UJ | 0.045 UJ | 0.04 U | 0.072 UJ | 0.16 UJ | 0.19 UJ | 0.16 UJ | 0.22 UJ | 0.077 UJ | 0.072 UJ | 0.1 UJ | 0.092 UJ | 0.11 UJ | 0.2 UJ | 0.14 UJ |
| PEST/PCB | AROCLOR-1254 | MG/KG | 0.077 UJ | 0.064 U | 0.076 UJ | 0.081 UJ | 0.071 UJ | 0.074 UJ | 0.12 UJ | 0.045 UJ | 0.04 U | 0.072 UJ | 0.16 UJ | 0.19 UJ | 0.16 UJ | 0.22 UJ | 0.077 UJ | 0.072 UJ | 0.1 UJ | 0.092 UJ | 0.11 UJ | 0.2 UJ | 0.14 UJ |
| PEST/PCB | AROCLOR-1260 | MG/KG | 1.1 J | 0.97 | 1.1 J | 0.73 J | 0.88 J | 0.53 J | 0.12 UJ | 0.045 UJ | 0.04 U | 0.072 UJ | 0.46 J | 0.48 J | 0.31 J | 0.24 J | 0.077 UJ | 0.072 UJ | 0.88 J | 0.71 J | 0.93 J | 1.2 J | 0.79 J |
| PEST/PCB | BETA-BHC | MG/KG | 0.004 UJ | 0.0033 U | 0.0039 UJ | 0.0041 UJ | 0.0037 UJ | 0.0038 UJ | 0.0062 UJ | 0.0023 UJ | 0.002 U | 0.0037 UJ | 0.0083 UJ | 0.0098 UJ | 0.0084 UJ | 0.011 UJ | 0.0039 UJ | 0.0037 UJ | 0.0051 UJ | 0.0048 UJ | 0.0055 UJ | 0.01 UJ | 0.0074 UJ |
| PEST/PCB | DELTA-BHC | MG/KG | 0.004 UJ | 0.0033 U | 0.0039 UJ | 0.0041 UJ | 0.0037 UJ | 0.0038 UJ | 0.0062 UJ | 0.0023 UJ | 0.002 U | 0.0037 UJ | 0.0083 UJ | 0.0098 UJ | 0.0084 UJ | 0.011 UJ | 0.0039 UJ | 0.0037 UJ | 0.0051 UJ | 0.0048 UJ | 0.0055 UJ | 0.01 UJ | 0.0074 UJ |
| PEST/PCB | DIELDRIN | MG/KG | 0.007 J | 0.0053 J | 0.0072 J | 0.01 J | 0.0062 J | 0.0043 J | 0.012 UJ | 0.0045 UJ | 0.004 U | 0.0072 UJ | 0.016 UJ | 0.019 UJ | 0.016 UJ | 0.022 UJ | 0.0077 UJ | 0.0072 UJ | 0.0063 J | 0.0092 UJ | 0.0065 J | 0.02 UJ | 0.014 UJ |
| PEST/PCB | ENDOSULFAN I | MG/KG | 0.004 UJ | 0.0033 U | 0.0039 UJ | 0.0041 UJ | 0.0037 UJ | 0.0038 UJ | 0.0062 UJ | 0.0023 UJ | 0.002 U | 0.0037 UJ | 0.0083 UJ | 0.0098 UJ | 0.0084 UJ | 0.011 UJ | 0.0039 UJ | 0.0037 UJ | 0.0051 UJ | 0.0048 UJ | 0.0055 UJ | 0.01 UJ | 0.0074 UJ |
| PEST/PCB | ENDOSULFAN II | MG/KG | 0.027 J | 0.029 J | 0.033 J | 0.023 J | 0.029 J | 0.015 J | 0.012 UJ | 0.0045 UJ | 0.004 U | 0.0072 UJ | 0.016 UJ | 0.019 UJ | 0.016 UJ | 0.016 J | 0.0077 UJ | 0.0072 UJ | 0.026 J | 0.021 J | 0.031 J | 0.04 J | 0.025 J |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | 0.022 J | 0.0085 J | 0.01 J | R | 0.012 J | 0.0077 J | 0.012 UJ | 0.0045 UJ | 0.004 U | 0.0072 UJ | 0.016 UJ | 0.019 UJ | 0.016 UJ | 0.022 UJ | 0.0077 UJ | 0.0072 UJ | 0.01 UJ | 0.011 J | 0.011 J | 0.021 J | 0.022 J |
| PEST/PCB | ENDRIN | MG/KG | R | R | R | R | R | R | 0.012 UJ | 0.0045 UJ | 0.004 U | 0.0072 UJ | R | 0.019 UJ | 0.016 UJ | 0.022 UJ | 0.0077 UJ | 0.0072 UJ | R | R | R | R | R |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | 0.042 J | 0.0064 U | 0.0076 UJ | 0.027 J | 0.036 J | 0.0074 UJ | 0.012 UJ | 0.0045 UJ | 0.004 U | 0.0072 UJ | 0.016 J | 0.019 UJ | 0.016 UJ | 0.022 UJ | 0.0077 UJ | 0.0072 UJ | 0.037 J | 0.023 J | 0.038 J | 0.048 J | 0.034 J |
| PEST/PCB | ENDRIN KETONE | MG/KG | 0.0076 UJ | 0.0064 U | R | 0.0081 UJ | 0.0071 UJ | 0.0074 UJ | 0.012 UJ | 0.0045 UJ | 0.004 U | 0.0072 UJ | 0.016 UJ | 0.019 UJ | 0.016 UJ | 0.022 UJ | 0.0077 UJ | 0.0072 UJ | 0.01 UJ | R | 0.011 UJ | 0.02 UJ | 0.014 UJ |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | 0.004 UJ | 0.0033 U | 0.0039 UJ | 0.0041 UJ | 0.0037 UJ | 0.0038 UJ | 0.0062 UJ | 0.0023 UJ | 0.002 U | 0.0037 UJ | 0.0083 UJ | 0.0098 UJ | 0.0084 UJ | 0.011 UJ | 0.0039 UJ | 0.0037 UJ | 0.0051 UJ | 0.0048 UJ | 0.0055 UJ | 0.01 UJ | 0.0074 UJ |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | 0.004 UJ | 0.0056 J | 0.0048 J | 0.0041 J | 0.0037 UJ | 0.0038 UJ | 0.0062 UJ | 0.0023 UJ | 0.002 U | 0.0037 UJ | 0.0085 J | 0.0098 UJ | 0.0084 UJ | 0.011 UJ | 0.0039 UJ | 0.0037 UJ | 0.016 J | 0.0077 J | 0.02 J | 0.03 J | 0.0074 UJ |
| PEST/PCB | HEPTACHLOR | MG/KG | 0.004 UJ | 0.0033 U | 0.0039 UJ | 0.0041 UJ | 0.0037 UJ | 0.0038 UJ | 0.0062 UJ | 0.0023 UJ | 0.002 U | 0.0037 UJ | 0.0083 UJ | 0.0098 UJ | 0.0084 UJ | 0.011 UJ | 0.0039 UJ | 0.0037 UJ | 0.0051 UJ | 0.0048 UJ | 0.0055 UJ | 0.01 UJ | 0.0074 UJ |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | 0.004 UJ | 0.0033 U | 0.0039 UJ | 0.0041 UJ | 0.0037 UJ | 0.0038 UJ | 0.0062 UJ | 0.0023 UJ | 0.002 U | 0.0037 UJ | 0.0083 UJ | 0.0098 UJ | 0.0084 UJ | 0.011 UJ | 0.0039 UJ | 0.0037 UJ | 0.0051 UJ | 0.0048 UJ | 0.0055 UJ | 0.01 UJ | 0.0074 UJ |
| PEST/PCB | METHOXYCHLOR | MG/KG | 0.04 UJ | 0.033 U | 0.039 UJ | 0.041 UJ | 0.037 UJ | 0.038 UJ | 0.062 UJ | 0.023 UJ | 0.02 U | 0.037 UJ | 0.083 UJ | 0.098 UJ | 0.084 UJ | 0.11 UJ | 0.039 UJ | 0.037 UJ | 0.051 UJ | 0.048 UJ | 0.055 UJ | 0.1 UJ | 0.074 UJ |
| PEST/PCB | TOXAPHENE | MG/KG | 0.4 UJ | 0.33 U | 0.39 UJ | 0.41 UJ | 0.37 UJ | 0.38 UJ | 0.62 UJ | 0.23 UJ | 0.2 U | 0.37 UJ | 0.83 UJ | 0.98 UJ | 0.84 UJ | 1.1 UJ | 0.39 UJ | 0.37 UJ | 0.51 UJ | 0.48 UJ | 0.55 UJ | 1 UJ | 0.74 UJ |
| SVOC | 1,1'-BIPHENYL | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | 1.9 UJ | 1.6 U | 1.9 UJ | 2 UJ | 1.8 UJ | 1.9 UJ | 3 UJ | 1.1 U | 1 U | 1.8 UJ | 4 UJ | 4.8 UJ | 4.1 UJ | 5.5 UJ | 1.9 UJ | 1.8 UJ | 5 UJ | 2.3 UJ | 2.7 UJ | 4.9 UJ | 3.6 UJ |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | 2,4-DINITROPHENOL | MG/KG | 1.9 UJ | 1.6 U | 1.9 UJ | 2 UJ | 1.8 UJ | 1.9 UJ | 3 UJ | 1.1 U | 1 U | 1.8 UJ | 4 UJ | 4.8 UJ | 4.1 UJ | 5.5 UJ | 1.9 UJ | 1.8 UJ | 5 UJ | 2.3 UJ | 2.7 UJ | 4.9 UJ | 3.6 UJ |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | 2-CHLOROPHENOL | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.093 J | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | 2-METHYLPHENOL | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | 2-NITROANILINE | MG/KG | 1.9 UJ | 1.6 U | 1.9 UJ | 2 UJ | 1.8 UJ | 1.9 UJ | 3 UJ | 1.1 U | 1 U | 1.8 UJ | 4 UJ | 4.8 UJ | 4.1 UJ | 5.5 UJ | 1.9 UJ | 1.8 UJ | 5 UJ | 2.3 UJ | 2.7 UJ | 4.9 UJ | 3.6 UJ |
| SVOC | 2-NITROPHENOL | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | 3-NITROANILINE | MG/KG | 1.9 UJ | 1.6 U | 1.9 UJ | 2 UJ | 1.8 UJ | 1.9 UJ | 3 UJ | 1.1 U | 1 U | 1.8 UJ | 4 UJ | 4.8 UJ | 4.1 UJ | 5.5 UJ | 1.9 UJ | 1.8 UJ | 5 UJ | 2.3 UJ | 2.7 UJ | 4.9 UJ | 3.6 UJ |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | 1.9 UJ | 1.6 U | 1.9 UJ | 2 UJ | 1.8 UJ | 1.9 UJ | 3 UJ | 1.1 U | 1 U | 1.8 UJ | 4 UJ | 4.8 UJ | 4.1 UJ | 5.5 UJ | 1.9 UJ | 1.8 UJ | 5 UJ | 2.3 UJ | 2.7 UJ | 4.9 UJ | 3.6 UJ |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | 4-CHLOROANILINE | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | 4-METHYLPHENOL | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | 4-NITROANILINE | MG/KG | 1.9 UJ | 1.6 U | 1.9 UJ | 2 UJ | 1.8 UJ | 1.9 UJ | 3 UJ | 1.1 U | 1 U | 1.8 UJ | 4 UJ | 4.8 UJ | 4.1 UJ | 5.5 UJ | 1.9 UJ | 1.8 UJ | 5 UJ | 2.3 UJ | 2.7 UJ | 4.9 UJ | 3.6 UJ |
| SVOC | 4-NITROPHENOL | MG/KG | 1.9 UJ | 1.6 U | 1.9 UJ | 2 UJ | 1.8 UJ | 1.9 UJ | 3 UJ | 1.1 U | 1 U | 1.8 UJ | 4 UJ | 4.8 UJ | 4.1 UJ | 5.5 UJ | 1.9 UJ | 1.8 UJ | 5 UJ | 2.3 UJ | 2.7 UJ | 4.9 UJ | 3.6 UJ |
| SVOC | ACENAPHTHENE | MG/KG | 0.13 J | 0.13 J | 0.19 J | 0.24 J | 0.14 J | 0.08 J | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.14 J | 0.19 J | 2 UJ | 1.4 UJ |
| SVOC | ACENAPHTHYLENE | MG/KG | 0.2 J | 0.16 J | 0.17 J | 0.2 J | 0.15 J | 0.13 J | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.17 J | 0.19 J | 2 UJ | 1.4 UJ |
| SVOC | ACETOPHENONE | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | ANTHRACENE | MG/KG | 0.38 J | 0.36 J | 0.46 J | 0.59 J | 0.37 J | 0.25 J | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 0.2 J | 1.9 UJ | 0.17 J | 2.2 UJ | 0.77 UJ | 0.72 UJ | 0.39 J | 0.36 J | 0.44 J | 0.38 J | 0.23 J |
| SVOC | ATRAZINE | MG/KG | 0.77 UJ | 0.64 UJ | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 UJ | 0.4 UJ | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | BENZALDEHYDE | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 0.13 J | 0.34 J | 1.4 UJ |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 1.4 J | 1.5 | 2.1 J | 1.9 J | 1.7 J | 1.1 J | 0.29 J | 0.45 U | 0.4 U | 0.72 UJ | 0.96 J | 0.67 J | 1 J | 0.26 J | 0.77 UJ | 0.72 UJ | 1.8 J | 1.7 J | 2.2 J | 1.9 J | 1.2 J |
| SVOC | BENZO(A)PYRENE | MG/KG | 1.6 J | 1.7 | 2.8 J | 2.2 J | 2.3 J | 1.3 J | 0.32 J | 0.45 U | 0.4 U | 0.72 UJ | 1.3 J | 0.89 J | 1.5 J | 0.36 J | 0.77 UJ | 0.72 UJ | 2.1 J | 2.1 J | 2.7 J | 2.5 J | 1.7 J |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 2 J | 2.1 | 3.7 J | 2.7 J | 3.1 J | 1.7 J | 0.42 J | 0.45 U | 0.4 U | 0.72 UJ | 2.1 J | 1.4 J | 2.6 J | 0.58 J | 0.77 UJ | 0.72 UJ | 2.9 J | 3 J | 3.5 J | 3.7 J | 2.5 J |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCSB0045 | HCSB0046 | HCSB0047 | HCSB0048 | HCSB0049 | HCSB0050 | HCSB0051 | HCSB0052 | HCSB0053 | HCSB0054 | HCSB0055 | HCSB0056 | HCSB0057 | HCSB0058 | HCSB0059 | HCSB0059 | HCSB0060 | HCSB0061 | HCSB0062 | HCSB0063 | HCSB0064 |
| | | Field Sample ID | HCSB0045-SS-AA-AB-0 | HCSB0046-SS-AA-AB-0 | HCSB0047-SS-AA-AB-0 | HCSB0048-SS-AA-AB-0 | HCSB0049-SS-AA-AB-0 | HCSB0050-SS-AA-AB-0 | HCSB0051-SS-AA-AB-0 | HCSB0052-SS-AA-AD-0 | HCSB0053-SS-AA-AD-0 | HCSB0054-SS-AA-AD-0 | HCSB0055-SS-AA-AB-0 | HCSB0056-SS-AA-AB-0 | HCSB0057-SS-AA-AB-0 | HCSB0058-SS-AA-AB-0 | HCSB0059-SS-AA-AB-0 | HCSB0059-SS-AA-AB-1 | HCSB0060-SS-AA-AB-0 | HCSB0061-SS-AA-AB-0 | HCSB0062-SS-AA-AB-0 | HCSB0063-SS-AA-AB-0 | HCSB0064-SS-AA-AB-0 |
| | | Sample Date | 6/8/05 | 6/8/05 | 6/8/05 | 6/8/05 | 6/8/05 | 6/8/05 | 6/8/05 | 6/8/05 | 6/8/05 | 6/8/05 | 6/9/05 | 6/9/05 | 6/9/05 | 6/9/05 | 6/9/05 | 6/9/05 | 6/9/05 | 6/9/05 | 6/9/05 | 6/9/05 | 6/9/05 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-1.5 | 0-1.5 | 0-1.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 1.1 J | 1.1 | 1.9 J | 1 J | 1.2 J | 0.82 J | 0.22 J | 0.45 U | 0.4 U | 0.72 UJ | 1.1 J | 0.7 J | 1.3 J | 0.33 J | 0.77 UJ | 0.72 UJ | 1.3 J | 1.5 J | 2 J | 2.4 J | 1.6 J |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.89 J | 0.88 | 1.5 J | 1.1 J | 1.2 J | 0.65 J | 0.15 J | 0.45 U | 0.4 U | 0.72 UJ | 0.65 J | 0.4 J | 0.71 J | 0.23 J | 0.77 UJ | 0.72 UJ | 1.1 J | 1.1 J | 1.7 J | 1.5 J | 0.92 J |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | 0.15 J | 0.29 J | 0.29 J | 0.3 J | 0.27 J | 0.13 J | 0.22 J | 0.45 U | 0.4 U | 0.72 UJ | 0.22 J | 1.9 UJ | 0.23 J | 2.2 UJ | 0.77 UJ | 0.72 UJ | 0.29 J | 0.27 J | 0.44 J | 0.58 J | 0.89 J |
| SVOC | CAPROLACTAM | MG/KG | 0.16 J | 0.13 J | 0.13 J | 0.19 J | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.086 J | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | CARBAZOLE | MG/KG | 0.24 J | 0.21 J | 0.37 J | 0.34 J | 0.29 J | 0.17 J | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 0.19 J | 2.2 UJ | 0.77 UJ | 0.72 UJ | 0.25 J | 0.25 J | 0.27 J | 0.29 J | 0.18 J |
| SVOC | CHRYSENE | MG/KG | 1.7 J | 1.7 | 3 J | 2.3 J | 2.5 J | 1.4 J | 0.39 J | 0.45 U | 0.4 U | 0.72 UJ | 1.5 J | 1 J | 1.8 J | 0.5 J | 0.77 UJ | 0.72 UJ | 2.4 J | 2.5 J | 3.3 J | 3.2 J | 2.1 J |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.35 J | 0.36 J | 0.56 J | 0.39 J | 0.41 J | 0.26 J | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 0.34 J | 2.2 UJ | 0.77 UJ | 0.72 UJ | 0.43 J | 0.47 J | 0.63 J | 0.63 J | 0.46 J |
| SVOC | DIBENZOFURAN | MG/KG | 0.77 UJ | 0.64 U | 0.088 J | 0.12 J | 0.076 J | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | DIETHYLPHTHALATE | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | DIMETHYLPHTHALATE | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | 0.77 UJ | 0.64 U | 0.18 J | 0.13 J | 0.077 J | 0.079 J | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | FLUORANTHENE | MG/KG | 4 J | 3.8 | 6.3 J | 5.4 J | 5.3 J | 2.9 J | 0.75 J | 0.45 U | 0.4 U | 0.12 J | 2.4 J | 1.6 J | 3 J | 0.74 J | 0.77 UJ | 0.72 UJ | 4.1 J | 4 J | 4.3 J | 4.6 J | 2.6 J |
| SVOC | FLUORENE | MG/KG | 0.14 J | 0.11 J | 0.18 J | 0.21 J | 0.12 J | 0.075 J | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.15 J | 0.18 J | 2 UJ | 1.4 UJ |
| SVOC | HEXACHLOROBENZENE | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | 0.77 UJ | 0.64 UJ | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 UJ | 0.4 UJ | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | HEXACHLOROETHANE | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 1.2 J | 1.2 | 2.1 J | 1.2 J | 1.5 J | 0.94 J | 0.23 J | 0.45 U | 0.4 U | 0.72 UJ | 1.2 J | 0.74 J | 1.4 J | 0.32 J | 0.77 UJ | 0.72 UJ | 1.6 J | 1.8 J | 2.4 J | 2.6 J | 1.8 J |
| SVOC | ISOPHORONE | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | NAPHTHALENE | MG/KG | 0.77 UJ | 0.065 J | 0.76 UJ | 0.12 J | 0.089 J | 0.082 J | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | NITROBENZENE | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | PENTACHLOROPHENOL | MG/KG | 1.9 UJ | 1.6 U | 1.9 UJ | 0.25 J | 1.8 UJ | 1.9 UJ | 3 UJ | 1.1 U | 1 U | 1.8 UJ | 4 UJ | 4.8 UJ | 4.1 UJ | 5.5 UJ | 1.9 UJ | 1.8 UJ | 5 UJ | 2.3 UJ | 2.7 UJ | 4.9 UJ | 3.6 UJ |
| SVOC | PHENANTHRENE | MG/KG | 1.7 J | 1.4 | 2.4 J | 2.5 J | 1.8 J | 1.1 J | 0.33 J | 0.45 U | 0.4 U | 0.72 UJ | 0.89 J | 0.67 J | 0.93 J | 0.31 J | 0.77 UJ | 0.72 UJ | 1.8 J | 1.7 J | 2.5 J | 2.4 J | 1.2 J |
| SVOC | PHENOL | MG/KG | 0.77 UJ | 0.64 U | 0.76 UJ | 0.81 UJ | 0.71 UJ | 0.74 UJ | 1.2 UJ | 0.45 U | 0.4 U | 0.72 UJ | 1.6 UJ | 1.9 UJ | 1.6 UJ | 2.2 UJ | 0.77 UJ | 0.72 UJ | 2 UJ | 0.92 UJ | 1.1 UJ | 2 UJ | 1.4 UJ |
| SVOC | PYRENE | MG/KG | 2.2 J | 2.1 | 3.8 J | 3 J | 2.9 J | 1.7 J | 0.48 J | 0.45 U | 0.4 U | 0.082 J | 1.9 J | 1.3 J | 2.3 J | 0.57 J | 0.77 UJ | 0.72 UJ | 3.3 J | 3.2 J | 4.1 J | 3.7 J | 2.4 J |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHANE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHENE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | | | | | | | | R | R | | | | | | | | | | | | |
| VOC | 1,2-DIBROMOETHANE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROETHANE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | ACETONE | MG/KG | | | | | | | | 0.013 U | 0.015 UJ | | | | | | | | | | | | |
| VOC | BENZENE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | BROMOFORM | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | BROMOMETHANE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | CARBON DISULFIDE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | CARBON TETRACHLORIDE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | CHLOROBENZENE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | CHLOROETHANE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | CHLOROFORM | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | CHLOROMETHANE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | CYCLOHEXANE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | DICHLOROMETHANE | MG/KG | | | | | | | | 0.0024 J | 0.0028 J | | | | | | | | | | | | |
| VOC | ETHYLBENZENE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | ISOPROPYLBENZENE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | METHYL ACETATE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | METHYL ETHYL KETONE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | METHYLCYCLOHEXANE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | STYRENE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | TETRACHLOROETHENE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | TOLUENE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | VINYL CHLORIDE | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | | | | | | | | 0.013 U | 0.012 U | | | | | | | | | | | | |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCSB0065 | HCSB0066 | HCSB0067 | HCSB0068 | HCSB0069 | HCSB0070 | HCSB0071 | HCSB0072 | HCSB0073 | HCSB0073 | HCSB0074 | HCSB0077 | HCSB0078 | HCSB0079 | HCSB0080 | HCSB0081 | HCSB0082 | HCSB0083 | HCSB0084 | HCSB0085 | HCSB0085 |
| | | Field Sample ID | HCSB0065-SS-AA-AB-0 | HCSB0066-SS-AA-AB-0 | HCSB0067-SS-AA-AB-0 | HCSB0068-SS-AA-AB-0 | HCSB0069-SS-AA-AB-0 | HCSB0070-SS-AA-AB-0 | HCSB0071-SS-AA-AB-0 | HCSB0072-SS-AA-AB-0 | HCSB0073-SS-AA-AC-0 | HCSB0073-SS-AA-AC-1 | HCSB0074-SS-AA-AE-0 | HCSB0077-SS-AA-AB-0 | HCSB0078-SS-AA-AB-0 | HCSB0079-SS-AA-AE-0 | HCSB0080-SS-AA-AE-0 | HCSB0081-SS-AA-AE-0 | HCSB0082-SS-AA-AE-0 | HCSB0083-SS-AA-AE-0 | HCSB0084-SS-AA-AE-0 | HCSB0085-SS-AA-AD-0 | HCSB0085-SS-AA-AD-1 |
| | | Sample Date | 6/9/05 | 6/9/05 | 6/13/05 | 6/13/05 | 6/13/05 | 6/13/05 | 6/13/05 | 6/13/05 | 6/13/05 | 6/13/05 | 6/13/05 | 6/14/05 | 6/14/05 | 6/15/05 | 6/15/05 | 6/15/05 | 6/15/05 | 6/15/05 | 6/15/05 | 6/15/05 | 6/15/05 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-1 | 0-1 | 0-2 | 0-0.5 | 0-0.5 | 0-2 | 0-2 | 0-2 | 0-2 | 0-2 | 0-2 | 0-1.5 | 0-1.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 8730 J | 4060 J | 7580 J | 6800 J | 5950 J | 5870 J | 2420 | 1670 | 4740 J | 4910 J | 956 | 1020 | 105 | 4290 | 9480 J | 3570 | 3060 | 2490 | 4860 | 582 | 463 |
| METALS | ANTIMONY | MG/KG | 2.6 J | 1 UJ | 0.56 UJ | 0.81 J | 0.55 UJ | 0.58 UJ | 0.49 UJ | 0.52 UJ | 0.56 UJ | 0.58 UJ | 0.49 UJ | 0.5 UJ | 0.5 UJ | 0.5 UJ | 1.2 UJ | 0.45 UJ | 0.45 UJ | 0.42 UJ | 0.41 UJ | 0.4 UJ | 0.37 UJ |
| METALS | ARSENIC | MG/KG | 80.6 J | 4.8 J | 222 J | 50 J | 133 J | 31.4 J | 1.8 J | 0.67 J | 65.3 J | 67.2 J | 1.8 J | 4.9 J | 0.73 J | 45.4 | 131 J | 9.1 | 17.6 | 3.5 | 15.8 | 3.6 J | 1.3 J |
| METALS | BARIUM | MG/KG | 471 J | 70.5 J | 1020 J | 468 J | 470 J | 221 J | 17.6 J | 17.7 J | 362 J | 298 J | 20.6 J | 12.1 J | 2.4 J | 108 | 1490 J | 58.5 | 80.6 | 11.2 J | 21.8 J | 9.2 J | 4 J |
| METALS | BERYLLIUM | MG/KG | 1.2 J | 0.66 J | 0.77 J | 0.82 J | 0.6 J | 0.55 J | 0.27 J | 0.2 J | 0.37 J | 0.36 J | 0.16 J | 0.17 J | 0.16 J | 0.22 J | 0.51 J | 0.17 J | 0.19 J | 0.07 J | 0.43 J | 0.02 U | 0.01 U |
| METALS | CADMIUM | MG/KG | 3.8 J | 1.1 J | 1.2 J | 3.8 J | 0.59 J | 1.8 J | 0.85 J | 0.14 J | 0.78 J | 0.47 J | 0.15 J | 0.042 U | 0.042 U | 0.45 J | 2.8 J | 0.49 J | 0.92 J | 0.35 J | 0.84 J | 0.13 J | 0.05 J |
| METALS | CALCIUM | MG/KG | 19000 J | 4560 J | 2930 J | 4470 J | 2680 J | 4370 J | 1500 J | 39.6 J | 3360 J | 2580 J | 94.7 J | 43.7 J | 23.7 J | 2290 | 8020 J | 1560 | 3410 | 867 | 3510 | 352 J | 83.1 J |
| METALS | CHROMIUM | MG/KG | 222 J | 8.9 J | 257 J | 140 J | 99 J | 49.7 J | 9.7 J | 2.4 J | 97.1 J | 95.4 J | 2.8 J | 4.7 J | 2.1 J | 48.2 | 720 J | 32.8 | 86.6 | 11 | 20.3 | 1.8 J | 1 J |
| METALS | COBALT | MG/KG | 3.9 J | 1.4 J | 6.7 J | 5 J | 3.1 J | 2.9 J | 0.96 J | 1 J | 2.7 J | 2 J | 0.77 J | 0.26 J | 2.7 J | 2 J | 2.3 J | 0.92 J | 1.3 J | 0.76 J | 3.2 J | 0.3 J | 0.13 J |
| METALS | COPPER | MG/KG | 76.5 J | 12.9 J | 60.9 J | 46 J | 29.6 J | 23.5 J | 9.5 J | 2.5 J | 28.2 J | 27.7 J | 4.8 J | 1.7 J | 2.2 J | 14.1 J | 88.1 J | 9 J | 26.8 J | 2.4 J | 3.1 J | 4.7 J | 0.64 J |
| METALS | CYANIDE | MG/KG | 21 J | 0.63 J | 22 J | 11.7 J | 10.1 J | 2.8 J | 0.13 J | 4.4 | 8.6 J | 10.5 J | 0.12 J | 0.17 J | 0.56 U | 1.4 U | 17.6 J | 1.2 U | 13.1 | 1.2 U | 1 U | 1.1 U | 1 U |
| METALS | IRON | MG/KG | 18700 J | 5120 J | 32700 J | 7850 J | 21800 J | 13800 J | 3080 | 478 | 13000 J | 13500 J | 1380 | 12200 | 903 | 9500 | 8740 J | 8840 | 6810 | 4520 | 14500 | 830 | 338 |
| METALS | LEAD | MG/KG | 2940 J | 115 J | 1850 J | 1230 J | 834 J | 345 J | 19.9 | 10.3 | 757 J | 705 J | 37.9 | 15.9 | 2.3 | R | R | R | R | R | R | R | R |
| METALS | MAGNESIUM | MG/KG | 611 J | 199 J | 593 J | 620 J | 502 J | 795 J | 432 J | 37.1 J | 443 J | 351 J | 40.6 J | 15.8 J | 11.2 J | 539 J | 436 J | 667 | 1720 | 310 J | 2000 | 158 J | 39.3 J |
| METALS | MANGANESE | MG/KG | 216 J | 28 J | 311 J | 35.6 J | 106 J | 147 J | 29.5 | 17 | 221 J | 125 J | 11.6 | 4.5 | 39.7 | 60.9 | 29.1 J | 25.6 | 19.1 | 9.8 | 14.7 | 3.1 J | 1.5 J |
| METALS | MERCURY | MG/KG | 0.42 J | 0.1 J | 0.84 J | 0.81 J | 0.65 J | 0.37 J | 0.097 | 0.0085 U | 0.36 J | 0.41 J | 0.03 J | 0.03 J | 0.008 U | 0.067 J | 0.196 J | 0.056 | 0.214 | 0.037 J | 0.011 U | 0.014 J | 0.011 U |
| METALS | NICKEL | MG/KG | 19.1 J | 5 J | 12.2 J | 12 J | 8.1 J | 8.4 J | 3 J | 0.58 J | 5.6 J | 5.1 J | 0.87 J | 0.36 J | 0.11 U | 3.7 J | 10.5 J | 3.1 J | 4.3 J | 2.7 J | 10.7 J | 1.3 J | 1.1 J |
| METALS | POTASSIUM | MG/KG | 404 J | 234 J | 336 J | 399 J | 315 J | 432 J | 257 J | 76.8 J | 360 J | 323 J | 85.9 J | 47.6 J | 32.4 J | 346 J | 395 J | 676 | 593 J | 415 J | 2950 | 62.8 J | 57.7 J |
| METALS | SELENIUM | MG/KG | 4.9 J | 1.2 J | 3 J | 1.6 J | 2.3 J | 1.8 J | 0.56 J | 0.46 J | 2.4 J | 2.6 J | 0.65 J | 1 | 0.32 U | 0.8 | 2.2 J | 1.3 | 0.88 | 0.8 | 1.6 | 0.42 U | 0.39 U |
| METALS | SILVER | MG/KG | 0.54 J | 0.17 J | 0.31 J | 0.31 J | 0.15 J | 0.17 J | 0.075 U | 0.08 U | 0.095 J | 0.15 J | 0.076 U | 0.077 U | 0.076 U | 0.1 U | 0.23 UJ | 0.15 J | 0.11 J | 0.08 J | 0.08 U | 0.08 U | 0.07 U |
| METALS | SODIUM | MG/KG | 165 J | 42.3 UJ | 106 J | 62.1 J | 58.1 J | 104 J | 25.2 J | 20.9 U | 159 J | 127 J | 19.8 U | 20.2 U | 20.1 U | 48.3 J | 182 J | 42.9 J | 67.4 J | 23.4 U | 66.2 J | 22.3 U | 20.6 U |
| METALS | THALLIUM | MG/KG | 1.4 UJ | 0.89 UJ | 1.1 J | 0.56 UJ | 0.76 J | 0.5 J | 0.41 U | 0.7 J | 0.68 J | 0.78 J | 0.68 J | 0.42 U | 1.3 J | 0.39 U | 0.91 UJ | 0.35 U | 0.35 U | 0.32 U | 0.32 U | 0.31 U | 0.28 U |
| METALS | VANADIUM | MG/KG | 46.1 J | 14.8 J | 31.4 J | 28.3 J | 23.7 J | 22.7 J | 9.4 | 5.1 J | 18.1 J | 19.4 J | 7.7 J | 8.7 J | 4.3 J | 12.2 | 18.4 J | 11.6 | 9.8 | 10.7 | 13.7 | 2.4 J | 1.4 J |
| METALS | ZINC | MG/KG | 560 J | 140 J | 291 J | 319 J | 141 J | 138 J | 43 J | 7.1 J | 123 J | 86.8 J | 7.4 J | 2.8 J | 3.5 J | 50.8 J | 351 J | 24.1 J | 76.9 J | 9.9 J | 63.3 J | 3.5 J | 1.5 J |
| PEST/PCB | 4,4'-DDD | MG/KG | 0.016 J | 0.008 UJ | 0.013 J | 0.033 J | 0.0044 J | 0.0057 J | 0.0033 J | 0.0041 U | 0.0071 UJ | 0.0043 J | 0.0045 U | 0.0042 U | 0.0037 U | 0.0041 J | 0.0033 J | 0.0042 U | 0.0014 J | 0.00073 J | 0.015 U | 0.0074 U | 0.0036 U |
| PEST/PCB | 4,4'-DDE | MG/KG | 0.029 J | 0.008 UJ | 0.0072 J | 0.011 J | 0.0037 J | 0.0073 UJ | 0.0052 U | 0.0041 U | 0.0071 UJ | 0.0074 UJ | 0.0045 U | 0.0042 U | 0.0037 U | 0.0035 J | 0.0017 J | 0.0042 U | 0.00097 J | 0.0039 U | 0.015 U | 0.0074 U | 0.0036 U |
| PEST/PCB | 4,4'-DDT | MG/KG | 0.013 J | 0.008 UJ | 0.0067 J | 0.0058 J | 0.0038 J | 0.0073 UJ | 0.0034 J | 0.0041 U | 0.0059 J | 0.0074 J | 0.0045 U | 0.0042 U | 0.0037 U | 0.0047 | 0.0014 J | 0.0042 U | 0.0048 U | 0.0039 U | 0.015 U | 0.0074 U | 0.0036 U |
| PEST/PCB | ALDRIN | MG/KG | 0.0067 UJ | 0.0041 UJ | 0.0037 UJ | 0.0043 UJ | 0.0036 UJ | 0.0038 UJ | 0.0027 U | 0.0021 U | 0.0037 UJ | 0.0038 UJ | 0.0023 U | 0.0022 U | 0.0019 U | 0.0024 U | 0.0056 UJ | 0.0022 U | 0.0025 U | 0.002 U | 0.008 U | 0.0038 U | 0.0019 U |
| PEST/PCB | ALPHA-BHC | MG/KG | 0.0067 UJ | 0.0041 UJ | 0.0037 UJ | 0.0043 UJ | 0.0036 UJ | 0.0038 UJ | 0.0027 U | 0.0021 U | 0.0037 UJ | 0.0038 UJ | 0.0023 U | 0.0022 U | 0.0019 U | 0.0024 U | 0.0056 UJ | 0.0022 U | 0.0025 U | 0.002 U | 0.008 U | 0.0038 U | 0.0019 U |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | 0.0067 UJ | 0.0041 UJ | 0.016 J | 0.034 J | 0.014 J | 0.027 J | 0.017 | 0.0021 U | 0.0023 J | 0.0039 J | 0.0023 U | 0.0022 U | 0.0019 U | 0.0024 U | 0.0056 UJ | 0.0022 U | 0.0025 U | 0.002 U | 0.008 U | 0.0038 U | 0.0019 U |
| PEST/PCB | AROCLOR-1016 | MG/KG | 0.13 UJ | 0.08 UJ | 0.071 UJ | 0.083 UJ | 0.069 UJ | 0.073 UJ | 0.052 U | 0.041 U | 0.071 UJ | 0.074 UJ | 0.045 U | 0.042 U | 0.037 U | 0.046 U | 0.11 UJ | 0.042 U | 0.048 U | 0.039 U | 0.15 U | 0.074 U | 0.036 U |
| PEST/PCB | AROCLOR-1221 | MG/KG | 0.26 UJ | 0.16 UJ | 0.14 UJ | 0.17 UJ | 0.14 UJ | 0.15 UJ | 0.1 U | 0.083 U | 0.14 UJ | 0.15 UJ | 0.09 U | 0.086 U | 0.076 U | 0.094 U | 0.22 UJ | 0.085 U | 0.097 U | 0.08 U | 0.31 U | 0.15 U | 0.073 U |
| PEST/PCB | AROCLOR-1232 | MG/KG | 0.13 UJ | 0.08 UJ | 0.071 UJ | 0.083 UJ | 0.069 UJ | 0.073 UJ | 0.052 U | 0.041 U | 0.071 UJ | 0.074 UJ | 0.045 U | 0.042 U | 0.037 U | 0.046 U | 0.11 UJ | 0.042 U | 0.048 U | 0.039 U | 0.15 U | 0.074 U | 0.036 U |
| PEST/PCB | AROCLOR-1242 | MG/KG | 0.13 UJ | 0.08 UJ | 0.071 UJ | 0.083 UJ | 0.069 UJ | 0.073 UJ | 0.052 U | 0.041 U | 0.071 UJ | 0.074 UJ | 0.045 U | 0.042 U | 0.037 U | 0.046 U | 0.11 UJ | 0.042 U | 0.048 U | 0.039 U | 0.15 U | 0.074 U | 0.036 U |
| PEST/PCB | AROCLOR-1248 | MG/KG | 0.13 UJ | 0.08 UJ | 0.071 UJ | 0.083 UJ | 0.069 UJ | 0.073 UJ | 0.052 U | 0.041 U | 0.071 UJ | 0.074 UJ | 0.045 U | 0.042 U | 0.037 U | 0.046 U | 0.11 UJ | 0.042 U | 0.048 U | 0.039 U | 0.15 U | 0.074 U | 0.036 U |
| PEST/PCB | AROCLOR-1254 | MG/KG | 0.13 UJ | 0.08 UJ | 0.071 UJ | 0.083 UJ | 0.069 UJ | 0.073 UJ | 0.052 U | 0.041 U | 0.071 UJ | 0.074 UJ | 0.045 U | 0.042 U | 0.037 U | 0.046 U | 0.11 UJ | 0.042 U | 0.048 U | 0.039 U | 0.15 U | 0.074 U | 0.036 U |
| PEST/PCB | AROCLOR-1260 | MG/KG | 0.13 UJ | 0.08 UJ | 0.079 J | 0.06 J | 0.055 J | 0.073 UJ | 0.052 U | 0.041 U | 0.1 J | 0.12 J | 0.045 U | 0.042 U | 0.037 U | 0.046 U | 0.11 UJ | 0.042 U | 0.048 U | 0.039 U | 0.15 U | 0.074 U | 0.036 U |
| PEST/PCB | BETA-BHC | MG/KG | 0.0067 UJ | 0.0041 UJ | 0.0037 UJ | 0.0043 UJ | 0.0036 UJ | 0.0038 UJ | 0.0027 U | 0.0021 U | 0.0037 UJ | 0.0038 UJ | 0.0023 U | 0.0022 U | 0.0019 U | 0.0024 U | 0.0056 UJ | 0.0022 U | 0.0025 U | 0.002 U | 0.008 U | 0.0038 U | 0.0019 U |
| PEST/PCB | DELTA-BHC | MG/KG | 0.0067 UJ | 0.0041 UJ | 0.0037 UJ | 0.0043 UJ | 0.0036 UJ | 0.0038 UJ | 0.0027 U | 0.0021 U | 0.0037 UJ | 0.0038 UJ | 0.0023 U | 0.0022 U | 0.0019 U | 0.0024 U | 0.0056 UJ | 0.0022 U | 0.0025 U | 0.002 U | 0.008 U | 0.0038 U | 0.0019 U |
| PEST/PCB | DIELDRIN | MG/KG | 0.013 UJ | 0.008 UJ | 0.0071 UJ | 0.0083 UJ | 0.0069 UJ | 0.0073 UJ | 0.0078 | 0.0041 U | 0.0071 UJ | 0.0074 UJ | 0.0045 U | 0.0042 U | 0.0037 U | 0.0046 U | 0.011 UJ | 0.0042 U | 0.0048 U | 0.0039 U | 0.015 U | 0.0074 U | 0.0036 U |
| PEST/PCB | ENDOSULFAN I | MG/KG | 0.0067 UJ | 0.0041 UJ | 0.0037 UJ | 0.0043 UJ | 0.0036 UJ | 0.0038 UJ | 0.0027 U | 0.0021 U | 0.0037 UJ | 0.0038 UJ | 0.0023 U | 0.0022 U | 0.0019 U | 0.0024 U | 0.0056 UJ | 0.0022 U | 0.0025 U | 0.002 U | 0.008 U | 0.0038 U | 0.0019 U |
| PEST/PCB | ENDOSULFAN II | MG/KG | 0.013 UJ | 0.008 UJ | 0.0071 UJ | 0.0083 UJ | 0.0069 UJ | 0.0073 UJ | 0.0052 U | 0.0041 U | 0.0071 UJ | 0.0038 UJ | 0.0045 U | 0.0042 U | 0.0037 U | 0.0046 U | 0.011 UJ | 0.0042 U | 0.0048 U | 0.0039 U | 0.015 U | 0.0074 U | 0.0036 U |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | 0.013 UJ | 0.008 UJ | 0.0071 UJ | 0.0083 UJ | 0.0069 UJ | 0.0073 UJ | 0.0052 U | 0.0041 U | 0.0071 UJ | 0.0074 UJ | 0.0045 U | 0.0042 U | 0.0037 U | 0.0046 U | 0.011 UJ | 0.0042 U | 0.0048 U | 0.0039 U | 0.015 U | 0.0074 U | 0.0036 U |
| PEST/PCB | ENDRIN | MG/KG | 0.013 UJ | 0.008 UJ | 0.0071 UJ | 0.0083 UJ | 0.0069 UJ | 0.0073 UJ | 0.0052 U | 0.0041 U | 0.0071 UJ | 0.0074 UJ | 0.0045 U | 0.0042 U | 0.0037 U | 0.0046 U | 0.011 UJ | 0.0042 U | 0.0048 U | 0.0039 U | 0.015 U | 0.0074 U | 0.0036 U |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | 0.013 UJ | 0.008 UJ | 0.0071 UJ | 0.0083 UJ | 0.0069 UJ | 0.0073 UJ | 0.0052 U | 0.0041 U | 0.0071 UJ | 0.0074 UJ | 0.0045 U | 0.0042 U | 0.0037 U | 0.0046 U | 0.011 UJ | 0.0042 U | 0.0048 U | 0.0039 U | 0.015 U | 0.0074 U | 0.0036 U |
| PEST/PCB | ENDRIN KETONE | MG/KG | 0.013 UJ | 0.008 UJ | 0.0071 UJ | 0.0083 UJ | 0.0069 UJ | 0.0073 UJ | 0.0052 U | 0.0041 U | 0.0071 UJ | 0.0074 UJ | 0.0045 U | 0.0042 U | 0.0037 U | 0.0046 U | 0.011 UJ | 0.0042 U | 0.0048 U | 0.0039 U | 0.015 U | 0.0074 U | 0.0036 U |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | 0.0067 UJ | 0.0041 UJ | 0.0037 UJ | 0.0043 UJ | 0.0036 UJ | 0.0038 UJ | 0.0027 U | 0.0021 U | 0.0037 UJ | 0.0038 UJ | 0.0023 U | 0.0022 U | 0.0019 U | 0.0024 U | 0.0056 UJ | 0.0022 U | 0.0025 U | 0.002 U | 0.008 U | 0.0038 U | 0.0019 U |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | 0.0067 UJ | 0.0041 UJ | 0.0097 J | 0.032 J | 0.0078 J | 0.019 J | 0.011 | 0.0021 U | 0.0037 UJ | 0.0038 UJ | 0.0023 U | 0.0022 U | 0.0019 U | 0.0024 U | 0.0056 UJ | 0.0022 U | 0.0025 U | 0.002 U | 0.008 U | 0.0038 U | 0.0019 U |
| PEST/PCB | HEPTACHLOR | MG/KG | 0.0067 UJ | 0.0041 UJ | 0.0037 UJ | 0.0043 UJ | 0.0036 UJ | 0.0038 UJ | 0.0027 U | 0.0021 U | 0.0037 UJ | 0.0038 UJ | 0.0023 U | 0.0022 U | 0.0019 U | 0.0024 U | 0.0056 UJ | 0.0022 U | 0.0025 U | 0.002 U | 0.008 U | 0.0038 U | 0.0019 U |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | 0.0067 UJ | 0.0041 UJ | 0.0037 UJ | 0.0043 UJ | 0.0036 UJ | 0.0038 UJ | 0.0027 U | 0.0021 U | 0.0037 UJ | 0.0038 UJ | 0.0023 U | 0.0022 U | 0.0019 U | 0.0024 U | 0.0056 UJ | 0.0022 U | 0.0025 U | 0.002 U | 0.008 U | 0.0038 U | 0.0019 U |
| PEST/PCB | METHOXYCHLOR | MG/KG | 0.067 UJ | 0.041 UJ | 0.037 UJ | 0.043 UJ | 0.036 UJ | 0.038 UJ | 0.027 U | 0.021 U | 0.037 UJ | 0.038 UJ | 0.023 U | 0.022 U | 0.019 U | 0.024 U | 0.056 UJ | 0.022 U | 0.025 U | 0.02 U | 0.08 U | 0.038 U | 0.019 U |
| PEST/PCB | TOXAPHENE | MG/KG | 0.67 UJ | 0.41 UJ | 0.37 UJ | 0.43 UJ | 0.36 UJ | 0.38 UJ | 0.27 U | 0.21 U | 0.37 UJ | 0.38 UJ | 0.23 U | 0.22 U | 0.19 U | 0.24 U | 0.56 UJ | 0.22 U | 0.25 U | 0.2 U | 0.8 U | 0.38 U | 0.19 U |
| SVOC | 1,1'-BIPHENYL | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.92 U | 2.2 UJ | 0.82 U | 0.96 U | 0.79 U | 0.77 U | 0.74 U | 0.72 U |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | 3.3 UJ | 2 UJ | 1.8 UJ | 2.1 UJ | 1.7 UJ | 1.8 UJ | 1.3 U | 1 U | 1.8 UJ | 1.9 UJ | 1.1 U | 1.1 U | 0.94 U | 1.2 U | 2.7 UJ | 1 U | 1.2 U | 0.99 U | 0.97 U | 0.93 U | 0.91 U |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | 2,4-DINITROPHENOL | MG/KG | 3.3 UJ | 2 UJ | 1.8 UJ | 2.1 UJ | 1.7 UJ | 1.8 UJ | 1.3 U | 1 U | 1.8 UJ | 1.9 UJ | 1.1 U | 1.1 U | 0.94 U | 1.2 UJ | 2.7 UJ | 1 UJ | 1.2 UJ | 0.99 UJ | 0.97 UJ | 0.93 UJ | 0.91 UJ |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | 2-CHLOROPHENOL | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | 2-METHYLPHENOL | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | 2-NITROANILINE | MG/KG | 3.3 UJ | 2 UJ | 1.8 UJ | 2.1 UJ | 1.7 UJ | 1.8 UJ | 1.3 U | 1 U | 1.8 UJ | 1.9 UJ | 1.1 U | 1.1 U | 0.94 U | 1.2 U | 2.7 UJ | 1 U | 1.2 U | 0.99 U | 0.97 U | 0.93 U | 0.91 U |
| SVOC | 2-NITROPHENOL | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | 3-NITROANILINE | MG/KG | 3.3 UJ | 2 UJ | 1.8 UJ | 2.1 UJ | 1.7 UJ | 1.8 UJ | 1.3 U | 1 U | 1.8 UJ | 1.9 UJ | 1.1 U | 1.1 U | 0.94 U | 1.2 U | 2.7 UJ | 1 U | 1.2 U | 0.99 U | 0.97 U | 0.93 U | 0.91 U |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | 3.3 UJ | 2 UJ | 1.8 UJ | 2.1 UJ | 1.7 UJ | 1.8 UJ | 1.3 U | 1 U | 1.8 UJ | 1.9 UJ | 1.1 U | 1.1 U | 0.94 U | 1.2 U | 2.7 UJ | 1 U | 1.2 U | 0.99 U | 0.97 U | 0.93 U | 0.91 U |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | 4-CHLOROANILINE | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | 4-METHYLPHENOL | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | 4-NITROANILINE | MG/KG | 3.3 UJ | 2 UJ | 1.8 UJ | 2.1 UJ | 1.7 UJ | 1.8 UJ | 1.3 U | 1 U | 1.8 UJ | 1.9 UJ | 1.1 U | 1.1 U | 0.94 U | 1.2 U | 2.7 UJ | 1 U | 1.2 U | 0.99 U | 0.97 U | 0.93 U | 0.91 U |
| SVOC | 4-NITROPHENOL | MG/KG | 3.3 UJ | 2 UJ | 1.8 UJ | 2.1 UJ | 1.7 UJ | 1.8 UJ | 1.3 U | 1 U | 1.8 UJ | 1.9 UJ | 1.1 U | 1.1 U | 0.94 U | 1.2 U | 2.7 UJ | 1 U | 1.2 U | 0.99 U | 0.97 U | 0.93 U | 0.91 U |
| SVOC | ACENAPHTHENE | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.081 J | 1.1 UJ | 0.41 U | 0.02 J | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | ACENAPHTHYLENE | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.082 J | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | ACETOPHENONE | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.92 U | 2.2 UJ | 0.82 U | 0.96 U | 0.79 U | 0.77 U | 0.74 U | 0.72 U |
| SVOC | ANTHRACENE | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.18 J | 1.1 UJ | 0.41 U | 0.02 J | 0.39 U | 0.034 J | 0.37 U | 0.36 U |
| SVOC | ATRAZINE | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.92 U | 2.2 UJ | 0.82 U | 0.96 U | 0.79 U | 0.77 U | 0.74 U | 0.72 U |
| SVOC | BENZALDEHYDE | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.92 U | 2.2 UJ | 0.82 U | 0.96 U | 0.79 U | 0.77 U | 0.74 U | 0.72 U |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.2 J | 0.8 UJ | 0.28 J | 0.22 J | 0.27 J | 0.16 J | 0.067 J | 0.41 U | 0.25 J | 0.29 J | 0.45 U | 0.42 U | 0.37 U | 1 | 0.05 J | 0.024 J | 0.11 J | 0.017 J | 0.33 J | 0.017 J | 0.36 U |
| SVOC | BENZO(A)PYRENE | MG/KG | 0.25 J | 0.8 UJ | 0.31 J | 0.25 J | 0.34 J | 0.2 J | 0.09 J | 0.41 U | 0.31 J | 0.33 J | 0.45 U | 0.42 U | 0.37 U | 0.99 | 0.041 J | 0.022 J | 0.082 J | 0.012 J | 0.31 J | 0.37 U | 0.36 U |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 0.35 J | 0.8 UJ | 0.43 J | 0.33 J | 0.46 J | 0.31 J | 0.12 J | 0.41 U | 0.4 J | 0.49 J | 0.45 U | 0.42 U | 0.37 U | 1.9 | 0.065 J | 0.049 J | 0.16 J | 0.021 J | 0.58 | 0.028 J | 0.36 U |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCSB0065 | HCSB0066 | HCSB0067 | HCSB0068 | HCSB0069 | HCSB0070 | HCSB0071 | HCSB0072 | HCSB0073 | HCSB0073 | HCSB0074 | HCSB0077 | HCSB0078 | HCSB0079 | HCSB0080 | HCSB0081 | HCSB0082 | HCSB0083 | HCSB0084 | HCSB0085 | HCSB0085 |
| | | Field Sample ID | HCSB0065-SS-AA-AB-0 | HCSB0066-SS-AA-AB-0 | HCSB0067-SS-AA-AB-0 | HCSB0068-SS-AA-AB-0 | HCSB0069-SS-AA-AB-0 | HCSB0070-SS-AA-AB-0 | HCSB0071-SS-AA-AB-0 | HCSB0072-SS-AA-AB-0 | HCSB0073-SS-AA-AC-0 | HCSB0073-SS-AA-AC-1 | HCSB0074-SS-AA-AE-0 | HCSB0077-SS-AA-AB-0 | HCSB0078-SS-AA-AB-0 | HCSB0079-SS-AA-AE-0 | HCSB0080-SS-AA-AE-0 | HCSB0081-SS-AA-AE-0 | HCSB0082-SS-AA-AE-0 | HCSB0083-SS-AA-AE-0 | HCSB0084-SS-AA-AE-0 | HCSB0085-SS-AA-AD-0 | HCSB0085-SS-AA-AD-1 |
| | | Sample Date | 6/9/05 | 6/9/05 | 6/13/05 | 6/13/05 | 6/13/05 | 6/13/05 | 6/13/05 | 6/13/05 | 6/13/05 | 6/13/05 | 6/13/05 | 6/14/05 | 6/14/05 | 6/15/05 | 6/15/05 | 6/15/05 | 6/15/05 | 6/15/05 | 6/15/05 | 6/15/05 | 6/15/05 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-1 | 0-1 | 0-2 | 0-0.5 | 0-0.5 | 0-2 | 0-2 | 0-2 | 0-2 | 0-2 | 0-2 | 0-1.5 | 0-1.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.23 J | 0.8 UJ | 0.19 J | 0.19 J | 0.27 J | 0.19 J | 0.08 J | 0.41 U | 0.24 J | 0.26 J | 0.45 U | 0.42 U | 0.37 U | 0.14 J | 1.1 UJ | 0.41 U | 0.016 J | 0.39 U | 0.049 J | 0.01 J | 0.36 U |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.13 J | 0.8 UJ | 0.18 J | 0.16 J | 0.18 J | 0.1 J | 0.056 J | 0.41 U | 0.19 J | 0.15 J | 0.45 U | 0.42 U | 0.37 U | 2 | 1.1 UJ | 0.051 J | 0.17 J | 0.39 U | 0.14 J | 0.37 U | 0.36 U |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.086 J | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 0.054 J | 0.41 U | 0.03 J | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | 0.25 J | 0.095 J | 0.27 J | 0.65 J | 0.33 J | 0.27 J | 0.16 J | 0.41 U | 0.087 J | 0.15 J | 0.45 U | 0.42 U | 0.37 U | 0.15 J | 0.22 J | 0.034 J | 0.1 J | 0.043 J | 0.041 J | 0.033 J | 0.36 U |
| SVOC | CAPROLACTAM | MG/KG | 1.3 UJ | 0.8 UJ | 0.17 J | 0.17 J | 0.18 J | 0.15 J | 0.096 J | 0.086 J | 0.15 J | 0.14 J | 0.07 J | 0.047 J | 0.052 J | 0.92 UJ | 2.2 UJ | 0.82 UJ | 0.96 UJ | 0.79 UJ | 0.77 UJ | 0.74 UJ | 0.72 UJ |
| SVOC | CARBAZOLE | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.14 J | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | CHRYSENE | MG/KG | 0.31 J | 0.8 UJ | 0.4 J | 0.35 J | 0.44 J | 0.29 J | 0.13 J | 0.41 U | 0.41 J | 0.43 J | 0.45 U | 0.42 U | 0.37 U | 1.2 | 0.038 J | 0.033 J | 0.11 J | 0.017 J | 0.31 J | 0.014 J | 0.36 U |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.16 J | 0.04 J | 0.41 U | 0.48 U | 0.39 U | 0.063 J | 0.37 U | 0.36 U |
| SVOC | DIBENZOFURAN | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.024 J | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | DIETHYLPHTHALATE | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | DIMETHYLPHTHALATE | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.073 J | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 0.075 J | 0.41 U | 0.021 J | 0.024 J | 0.38 U | 0.019 J | 0.36 U |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.015 J | 0.012 J |
| SVOC | FLUORANTHENE | MG/KG | 0.33 J | 0.8 UJ | 0.5 J | 0.44 J | 0.52 J | 0.33 J | 0.14 J | 0.41 U | 0.52 J | 0.81 J | 0.45 U | 0.42 U | 0.37 U | 2.7 | 0.064 J | 0.05 J | 0.24 J | 0.022 J | 0.68 | 0.022 J | 0.36 U |
| SVOC | FLUORENE | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.08 J | 1.1 UJ | 0.41 U | 0.026 J | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | HEXACHLOROBENZENE | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | HEXACHLOROETHANE | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.25 J | 0.8 UJ | 0.21 J | 0.21 J | 0.3 J | 0.2 J | 0.08 J | 0.41 U | 0.23 J | 0.28 J | 0.45 U | 0.42 U | 0.37 U | 0.48 | 0.051 J | 0.012 J | 0.033 J | 0.39 U | 0.12 J | 0.37 U | 0.36 U |
| SVOC | ISOPHORONE | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | NAPHTHALENE | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | NITROBENZENE | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | PENTACHLOROPHENOL | MG/KG | 3.3 UJ | 2 UJ | 1.8 UJ | 2.1 UJ | 1.7 UJ | 1.8 UJ | 1.3 U | 1 U | 1.8 UJ | 1.9 UJ | 1.1 U | 1.1 U | 0.94 U | 1.2 U | 2.7 UJ | 1 U | 1.2 U | 0.99 U | 0.97 U | 0.93 U | 0.91 U |
| SVOC | PHENANTHRENE | MG/KG | 0.2 J | 0.8 UJ | 0.3 J | 0.27 J | 0.3 J | 0.17 J | 0.098 J | 0.41 U | 0.26 J | 0.3 J | 0.45 U | 0.42 U | 0.37 U | 1.2 | 0.047 J | 0.021 J | 0.1 J | 0.01 J | 0.071 J | 0.01 J | 0.36 U |
| SVOC | PHENOL | MG/KG | 1.3 UJ | 0.8 UJ | 0.71 UJ | 0.83 UJ | 0.69 UJ | 0.73 UJ | 0.52 U | 0.41 U | 0.71 UJ | 0.74 UJ | 0.45 U | 0.42 U | 0.37 U | 0.46 U | 1.1 UJ | 0.41 U | 0.48 U | 0.39 U | 0.38 U | 0.37 U | 0.36 U |
| SVOC | PYRENE | MG/KG | 0.4 J | 0.8 UJ | 0.47 J | 0.38 J | 0.45 J | 0.27 J | 0.12 J | 0.41 U | 0.43 J | 0.44 J | 0.45 U | 0.42 U | 0.37 U | 1.9 | 0.06 J | 0.038 J | 0.16 J | 0.019 J | 0.46 | 0.016 J | 0.36 U |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | 1,1-DICHLOROETHANE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | 1,1-DICHLOROETHENE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | R | R | R | R | R | R | R | R |
| VOC | 1,2-DIBROMOETHANE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | 1,2-DICHLOROETHANE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | 2-HEXANONE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 UJ | 0.038 UJ | 0.038 UJ | 0.013 UJ | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 UJ | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | ACETONE | MG/KG | | | | | | | | | 0.038 J | 0.042 J | 0.013 U | | | 0.018 | 0.08 J | 0.046 J | 0.014 | 0.01 J | 0.011 U | 0.009 U | 0.009 U |
| VOC | BENZENE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | BROMODICHLOROMETHANE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | BROMOFORM | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | BROMOMETHANE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | CARBON DISULFIDE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | CARBON TETRACHLORIDE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | CHLOROBENZENE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | CHLOROETHANE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | CHLOROFORM | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | CHLOROMETHANE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | CYCLOHEXANE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | DICHLOROMETHANE | MG/KG | | | | | | | | | 0.0047 J | 0.0034 J | 0.0019 J | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.011 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | ETHYLBENZENE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | ISOPROPYLBENZENE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | METHYL ACETATE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 UJ | 0.011 UJ | 0.009 UJ | 0.009 UJ |
| VOC | METHYL ETHYL KETONE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.006 J | 0.034 J | 0.048 J | 0.006 J | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | METHYLCYCLOHEXANE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | STYRENE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | TETRACHLOROETHENE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.011 J | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | TOLUENE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | VINYL CHLORIDE | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.014 U | 0.038 UJ | 0.038 UJ | 0.013 U | 0.013 U | 0.011 U | 0.009 U | 0.009 U |
| VOC | XYLENES (TOTAL) | MG/KG | | | | | | | | | 0.021 UJ | 0.023 UJ | 0.013 U | | | 0.042 U | 0.11 UJ | 0.11 UJ | 0.038 U | 0.04 U | 0.032 U | 0.027 U | 0.028 U |

**Table 1  Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCSB0086 | HCSB0087 | HCSB0088 | HCSB0089 | HCSB0090 | HCSB0091 | HCSB0092 | HCSB0093 | HCSB0094 | HCSB0095 | HCSB0099 | HCSB0100 | HCSB0101 | HCSB0102 | HCSB0103 | HCSB0104 | HCSB0105 | HCSB0161 | HCSB0162 | HCSB0163 | HCSB0164 |
| | | Field Sample ID | HCSB0086-SS-AA-AB-0 | HCSB0087-SS-AA-AB-0 | HCSB0088-SS-AA-AB-0 | HCSB0089-SS-AA-AB-0 | HCSB0090-SS-AA-AB-0 | HCSB0091-SS-AA-AB-0 | HCSB0092-SS-AA-AB-0 | HCSB0093-SS-AA-AB-0 | HCSB0094-SS-AA-AB-0 | HCSB0095-SS-AA-AB-0 | HCSB0099-SS-AA-AB-0 | HCSB0100-SS-AA-AB-0 | HCSB0101-SS-AA-AB-0 | HCSB0102-SS-AA-AB-0 | HCSB0103-SS-AA-AB-0 | HCSB0104-SS-AA-AB-0 | HCSB0105-SS-AA-AB-0 | HCSB0161-SS-AA-AB-0 | HCSB0162-SS-AA-AB-0 | HCSB0163-SS-AA-AB-0 | HCSB0164-SS-AA-AB-0 |
| | | Sample Date | 6/16/05 | 6/16/05 | 6/16/05 | 6/16/05 | 6/16/05 | 6/16/05 | 6/16/05 | 6/16/05 | 6/16/05 | 6/16/05 | 6/20/05 | 6/20/05 | 6/20/05 | 6/20/05 | 6/20/05 | 6/20/05 | 6/20/05 | 7/12/05 | 7/12/05 | 7/12/05 | 7/12/05 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 15200 J | 17800 J | 18400 J | 17100 J | 19200 J | 17100 J | 15700 J | 12300 J | 15400 J | 12300 J | 11100 J | 9790 J | 6220 J | 10600 J | 12900 J | 36600 J | 12300 J | 6530 J | 12800 J | 11000 J | 15400 J |
| METALS | ANTIMONY | MG/KG | 1.8 J | 0.95 J | 0.92 J | 0.77 UJ | 1 UJ | 1.1 J | 1.2 J | 1.5 J | 2 J | 2.8 J | 2.3 J | 3.4 J | 1.4 UJ | 2.5 J | 4.6 J | 3 J | 2.2 J | 1.4 J | 2.2 J | 1.7 J | 2.2 J |
| METALS | ARSENIC | MG/KG | 180 J | 661 J | 240 J | 237 J | 160 J | 68.8 J | 32.5 J | 524 J | 286 J | 329 J | 284 J | 93.2 J | 28.2 J | 273 J | 278 J | 367 J | 117 J | 34.7 J | 144 J | 206 J | 255 J |
| METALS | BARIUM | MG/KG | 444 J | 377 J | 826 J | 320 J | 396 J | 187 J | 210 J | 1420 J | 1130 J | 701 J | 662 J | 971 J | 142 J | 661 J | 1120 J | 727 J | 634 J | 177 J | 378 J | 269 J | 447 J |
| METALS | BERYLLIUM | MG/KG | 1 J | 1.3 J | 1.2 J | 1.3 J | 1.3 J | 1.3 J | 1.2 J | 0.88 J | 1.1 J | 0.87 J | 0.66 J | 0.61 J | 0.38 J | 0.48 J | 0.68 J | 0.74 J | 0.54 J | 0.5 J | 0.81 J | 0.77 J | 1 J |
| METALS | CADMIUM | MG/KG | 2.5 J | 2.9 J | 2.6 J | 3.1 J | 4.4 J | 3.6 J | 2.4 J | 10 J | 5 J | 4.9 J | 4.2 J | 3.4 J | 1.7 J | 3.6 J | 4 J | 2.5 J | 1.7 J | 1.1 J | 2.4 J | 1.7 J | 3.1 J |
| METALS | CALCIUM | MG/KG | 4420 J | 4090 J | 3690 J | 4240 J | 4690 J | 3880 J | 2500 J | 4560 J | 4340 J | 4240 J | 3460 J | 2460 J | 1840 J | 4740 J | 2570 J | 5590 J | 2550 J | 2220 J | 3260 J | 3720 J | 3280 J |
| METALS | CHROMIUM | MG/KG | 262 J | 407 J | 673 J | 396 J | 263 J | 49.5 J | 50.5 J | 824 J | 475 J | 338 J | 278 J | 521 J | 129 J | 246 J | 367 J | 169 J | 184 J | 45.5 J | 93 J | 86.7 J | 177 J |
| METALS | COBALT | MG/KG | 9.2 J | 7.1 J | 6.5 J | 7.9 J | 10.3 J | 7 J | 3.5 J | 5.5 J | 9.6 J | 11.2 J | 5.9 J | 3 J | 1.8 J | 6.3 J | 14.7 J | 5.6 J | 3.7 J | 1.2 J | 3.1 J | 3.8 J | 4.6 J |
| METALS | COPPER | MG/KG | 103 J | 102 J | 147 J | 87.6 J | 164 J | 43.2 J | 56.4 J | 365 J | 245 J | 139 J | R | R | R | R | R | R | R | 33.8 J | 61.6 J | 62.3 J | 98.7 J |
| METALS | CYANIDE | MG/KG | 5.6 J | 11 J | 5.4 J | 2.9 J | 3.9 J | 2.6 UJ | 3.5 J | 85.9 J | 11.5 J | 11.4 J | 4.1 J | 35.4 J | 3.8 UJ | 11.6 J | 30.4 J | 15.9 J | 22.9 J | 3.5 J | 11 J | 13 J | 15 J |
| METALS | IRON | MG/KG | 35100 J | 40100 J | 31800 J | 35900 J | 35300 J | 23400 J | 12000 J | 30800 J | 28000 J | 41100 J | 33300 J | 15800 J | 4690 J | 22900 J | 19800 J | 36300 J | 22000 J | 7740 J | 21100 J | 26200 J | 30100 J |
| METALS | LEAD | MG/KG | R | R | R | R | R | R | R | R | R | R | 2800 J | 4160 J | 3000 J | 2420 J | 3080 J | 1360 J | 1790 J | 586 J | 1090 J | 1040 J | 2040 J |
| METALS | MAGNESIUM | MG/KG | 1310 J | 1420 J | 1420 J | 1450 J | 1550 J | 1460 J | 1290 J | 764 J | 1130 J | 994 J | 791 J | 615 J | 459 J | 600 J | 682 J | 777 J | 647 J | 653 J | 1120 J | 1000 J | 1210 J |
| METALS | MANGANESE | MG/KG | 435 J | 241 J | 255 J | 313 J | 275 J | 116 J | 46.7 J | 222 J | 287 J | 380 J | 148 J | 59.7 J | 17.3 J | 176 J | 69.9 J | 126 J | 67.3 J | 18.1 J | 51.5 J | 106 J | 90.9 J |
| METALS | MERCURY | MG/KG | 0.551 J | 0.441 J | 0.645 J | 0.726 J | 0.521 J | 0.453 J | 0.453 J | 0.6 J | 0.635 J | 0.588 J | 0.45 J | 0.652 J | 0.235 J | 0.446 J | 0.615 J | 0.76 J | 0.347 J | 0.442 J | 0.642 J | 0.668 J | 0.835 J |
| METALS | NICKEL | MG/KG | 16 J | 16.9 J | 16.9 J | 16.8 J | 21.2 J | 18.5 J | 13.1 J | 17.3 J | 21.3 J | 19.5 J | 14.2 J | 9.5 J | 5.9 J | 16.1 J | 15.4 J | 16.2 J | 9.1 J | 5.7 J | 11.4 J | 10.4 J | 14.1 J |
| METALS | POTASSIUM | MG/KG | 880 J | 1050 J | 1020 J | 1000 J | 1100 J | 1040 J | 1080 J | 640 J | 639 J | 669 J | 606 J | 507 J | 481 J | 432 J | 529 J | 548 J | 514 J | 624 J | 895 J | 777 J | 871 J |
| METALS | SELENIUM | MG/KG | 3.4 J | 4.2 J | 3.9 J | 4.3 J | 4.1 J | 3.8 J | 3.7 J | 4.2 J | 4.2 J | 4.4 J | 4.1 J | 3.3 J | 2.9 J | 2.9 J | 3 J | 5.4 J | 2.8 J | 2.5 J | 3 J | 3.4 J | 3.4 J |
| METALS | SILVER | MG/KG | 0.26 J | 0.26 J | 0.29 J | 0.28 J | 0.37 J | 0.23 J | 0.18 UJ | 0.4 J | 0.82 J | 0.44 J | 0.55 J | 0.31 J | 0.28 UJ | 0.72 J | 0.38 J | 3.1 J | 0.76 J | 0.27 UJ | 0.35 UJ | 0.36 UJ | 0.32 UJ |
| METALS | SODIUM | MG/KG | 278 J | 266 J | 282 J | 354 J | 340 J | 242 J | 88.2 J | 132 J | 223 J | 184 J | 175 J | 69.9 UJ | 80.6 UJ | 141 J | 105 J | 239 J | 111 J | 33.9 UJ | 205 J | 153 J | 100 J |
| METALS | THALLIUM | MG/KG | 0.64 UJ | 0.75 J | 1.4 J | 1.2 J | 0.79 UJ | 0.96 J | 0.74 UJ | 1.1 UJ | 0.81 UJ | 1 UJ | 0.9 UJ | 0.96 UJ | 1.1 UJ | 1.3 UJ | 0.76 UJ | 1.2 UJ | 0.66 UJ | 1.1 UJ | 1.3 UJ | 1.4 UJ | 1.2 UJ |
| METALS | VANADIUM | MG/KG | 50.1 J | 57.4 J | 52.3 J | 52.4 J | 53.9 J | 53 J | 35.6 J | 32.2 J | 42.2 J | 37.6 J | 30.5 J | 23.9 J | 13.5 J | 26.4 J | 32.1 J | 54.1 J | 44.9 J | 18 J | 38.6 J | 36.9 J | 46.6 J |
| METALS | ZINC | MG/KG | 268 J | 298 J | 277 J | 280 J | 328 J | 243 J | 156 J | 705 J | 619 J | 557 J | 485 J | 334 J | 117 J | 474 J | 572 J | 438 J | 230 J | 59.9 J | 150 J | 124 J | 216 |
| PEST/PCB | 4,4'-DDD | MG/KG | 0.058 J | 0.051 J | 0.033 J | 0.03 J | 0.016 J | 0.028 J | 0.0098 J | 0.011 J | 0.011 J | 0.011 J | 0.0065 J | 0.014 J | 0.012 J | 0.0095 J | 0.0074 J | 0.011 J | 0.013 J | 0.0038 J | 0.0045 J | 0.0057 J | 0.012 J |
| PEST/PCB | 4,4'-DDE | MG/KG | 0.03 J | 0.057 J | 0.03 J | 0.034 J | 0.02 J | 0.024 J | 0.011 J | 0.013 J | 0.022 J | 0.016 J | 0.0091 J | 0.018 J | 0.0066 J | 0.011 J | 0.0039 J | 0.013 J | 0.0051 J | 0.015 J | 0.013 J | 0.017 J | 0.022 J |
| PEST/PCB | 4,4'-DDT | MG/KG | 0.03 UJ | 0.014 J | 0.0086 J | 0.029 UJ | 0.012 J | 0.0076 J | 0.0052 J | 0.024 UJ | 0.02 UJ | 0.026 UJ | 0.011 UJ | 0.011 UJ | 0.013 UJ | 0.019 UJ | 0.0087 UJ | 0.015 UJ | 0.0082 UJ | 0.008 UJ | 0.0089 UJ | 0.01 UJ | 0.0097 UJ |
| PEST/PCB | ALDRIN | MG/KG | 0.015 UJ | 0.014 UJ | 0.0083 UJ | 0.015 UJ | 0.0094 UJ | 0.0092 UJ | 0.0096 UJ | 0.012 UJ | 0.011 UJ | 0.013 UJ | 0.0056 UJ | 0.0058 UJ | 0.0068 UJ | 0.01 UJ | 0.0045 UJ | 0.0075 UJ | 0.0042 UJ | 0.0041 UJ | 0.0046 UJ | 0.0051 UJ | 0.005 UJ |
| PEST/PCB | ALPHA-BHC | MG/KG | 0.015 UJ | 0.014 UJ | 0.0083 UJ | 0.015 UJ | 0.0094 UJ | 0.0092 UJ | 0.0096 UJ | 0.012 UJ | 0.011 UJ | 0.013 UJ | 0.0056 UJ | 0.0058 UJ | 0.0068 UJ | 0.01 UJ | 0.0045 UJ | 0.0075 UJ | 0.0042 UJ | 0.0041 UJ | 0.0046 UJ | 0.0051 UJ | 0.005 UJ |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | 0.015 UJ | 0.014 UJ | 0.0083 UJ | 0.015 UJ | 0.011 J | 0.0096 J | 0.0096 UJ | 0.012 UJ | 0.029 J | 0.014 J | 0.0067 J | 0.0058 UJ | 0.0068 UJ | 0.01 UJ | 0.0045 UJ | 0.026 J | 0.0042 UJ | R | 0.0046 UJ | R | 0.0097 J |
| PEST/PCB | AROCLOR-1016 | MG/KG | 0.3 UJ | 0.27 UJ | 0.16 UJ | 0.29 UJ | 0.18 UJ | 0.18 UJ | 0.19 UJ | 0.24 UJ | 0.2 UJ | 0.26 UJ | 0.11 UJ | 0.11 UJ | 0.13 UJ | 0.19 UJ | 0.087 UJ | 0.15 UJ | 0.082 UJ | 0.08 UJ | 0.089 UJ | 0.1 UJ | 0.097 UJ |
| PEST/PCB | AROCLOR-1221 | MG/KG | 0.6 UJ | 0.56 UJ | 0.33 UJ | 0.58 UJ | 0.37 UJ | 0.36 UJ | 0.38 UJ | 0.48 UJ | 0.42 UJ | 0.53 UJ | 0.22 UJ | 0.23 UJ | 0.27 UJ | 0.39 UJ | 0.18 UJ | 0.3 UJ | 0.17 UJ | 0.16 UJ | 0.18 UJ | 0.2 UJ | 0.2 UJ |
| PEST/PCB | AROCLOR-1232 | MG/KG | 0.3 UJ | 0.27 UJ | 0.16 UJ | 0.29 UJ | 0.18 UJ | 0.18 UJ | 0.19 UJ | 0.24 UJ | 0.2 UJ | 0.26 UJ | 0.11 UJ | 0.11 UJ | 0.13 UJ | 0.19 UJ | 0.087 UJ | 0.15 UJ | 0.082 UJ | 0.08 UJ | 0.089 UJ | 0.1 UJ | 0.097 UJ |
| PEST/PCB | AROCLOR-1242 | MG/KG | 0.3 UJ | 0.27 UJ | 0.16 UJ | 0.29 UJ | 0.18 UJ | 0.18 UJ | 0.19 UJ | 0.24 UJ | 0.2 UJ | 0.26 UJ | 0.11 UJ | 0.11 UJ | 0.13 UJ | 0.19 UJ | 0.087 UJ | 0.15 UJ | 0.082 UJ | 0.08 UJ | 0.089 UJ | 0.1 UJ | 0.097 UJ |
| PEST/PCB | AROCLOR-1248 | MG/KG | 0.3 UJ | 0.27 UJ | 0.16 UJ | 0.29 UJ | 0.18 UJ | 0.18 UJ | 0.19 UJ | 0.24 UJ | 0.2 UJ | 0.26 UJ | 0.11 UJ | 0.11 UJ | 0.13 UJ | 0.19 UJ | 0.087 UJ | 0.15 UJ | 0.082 UJ | 0.08 UJ | 0.089 UJ | 0.1 UJ | 0.097 UJ |
| PEST/PCB | AROCLOR-1254 | MG/KG | 0.3 UJ | 0.27 UJ | 0.16 UJ | 0.29 UJ | 0.18 UJ | 0.18 UJ | 0.19 UJ | 0.24 UJ | 0.2 UJ | 0.26 UJ | 0.11 UJ | 0.11 UJ | 0.13 UJ | 0.19 UJ | 0.087 UJ | 0.15 UJ | 0.082 UJ | 0.08 UJ | 0.089 UJ | 0.1 UJ | 0.097 UJ |
| PEST/PCB | AROCLOR-1260 | MG/KG | 0.3 UJ | 0.27 UJ | 0.16 UJ | 0.29 UJ | 0.18 UJ | 0.18 UJ | 0.19 UJ | 0.24 UJ | 0.2 UJ | 0.26 UJ | 0.11 UJ | 0.11 UJ | 0.13 UJ | 0.19 UJ | 0.087 UJ | 0.15 UJ | 0.082 UJ | 0.08 UJ | 0.089 UJ | 0.1 UJ | 0.097 UJ |
| PEST/PCB | BETA-BHC | MG/KG | 0.015 UJ | 0.014 UJ | 0.0083 UJ | 0.015 UJ | 0.0094 UJ | 0.0092 UJ | 0.0096 UJ | 0.012 UJ | 0.011 UJ | 0.013 UJ | 0.0056 UJ | 0.0058 UJ | 0.0068 UJ | 0.01 UJ | 0.0045 UJ | 0.0019 J | 0.0042 UJ | 0.0041 UJ | 0.0046 UJ | 0.0051 UJ | 0.005 UJ |
| PEST/PCB | DELTA-BHC | MG/KG | 0.015 UJ | 0.014 UJ | 0.0083 UJ | 0.015 UJ | 0.0094 UJ | 0.0092 UJ | 0.0096 UJ | 0.012 UJ | 0.011 UJ | 0.013 UJ | 0.0056 UJ | 0.0058 UJ | 0.0068 UJ | 0.01 UJ | 0.0045 UJ | 0.0075 UJ | 0.0042 UJ | 0.0041 UJ | 0.0046 UJ | 0.0051 UJ | 0.005 UJ |
| PEST/PCB | DIELDRIN | MG/KG | 0.03 UJ | 0.027 UJ | 0.016 UJ | 0.029 UJ | 0.018 UJ | 0.018 UJ | 0.019 UJ | 0.024 UJ | 0.0029 J | 0.0026 J | 0.011 UJ | 0.011 UJ | 0.013 UJ | 0.019 UJ | 0.0087 UJ | 0.015 UJ | 0.001 J | 0.008 UJ | 0.0089 UJ | 0.01 UJ | 0.0097 UJ |
| PEST/PCB | ENDOSULFAN I | MG/KG | 0.015 UJ | 0.014 UJ | 0.0083 UJ | 0.015 UJ | 0.0094 UJ | 0.0092 UJ | 0.0096 UJ | 0.012 UJ | 0.011 UJ | 0.013 UJ | 0.0056 UJ | 0.0058 UJ | 0.0068 UJ | 0.01 UJ | 0.0045 UJ | 0.0075 UJ | 0.0042 UJ | 0.0041 UJ | 0.0046 UJ | 0.0051 UJ | 0.005 UJ |
| PEST/PCB | ENDOSULFAN II | MG/KG | 0.03 UJ | 0.027 UJ | 0.016 UJ | 0.029 UJ | 0.018 UJ | 0.018 UJ | 0.019 UJ | 0.024 UJ | 0.02 UJ | 0.026 UJ | 0.011 UJ | 0.011 UJ | 0.013 UJ | 0.019 UJ | 0.0087 UJ | 0.015 UJ | 0.0082 UJ | 0.008 UJ | 0.0089 UJ | 0.01 UJ | 0.0097 UJ |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | 0.03 UJ | 0.027 UJ | 0.016 UJ | 0.029 UJ | 0.018 UJ | 0.018 UJ | 0.019 UJ | 0.024 UJ | 0.02 UJ | 0.0062 J | 0.0017 J | 0.003 J | 0.013 UJ | 0.019 UJ | 0.0087 UJ | 0.0043 J | 0.0082 UJ | 0.0031 J | 0.003 J | 0.01 UJ | 0.0037 J |
| PEST/PCB | ENDRIN | MG/KG | 0.03 UJ | 0.027 UJ | 0.016 UJ | 0.029 UJ | 0.018 UJ | 0.018 UJ | 0.019 UJ | 0.024 UJ | 0.02 UJ | 0.026 UJ | 0.011 UJ | 0.011 UJ | 0.013 UJ | 0.019 UJ | 0.0087 UJ | 0.015 UJ | 0.0082 UJ | 0.008 UJ | 0.0089 UJ | 0.01 UJ | 0.0097 UJ |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | 0.03 UJ | 0.027 UJ | 0.0032 J | 0.029 UJ | 0.018 UJ | 0.018 UJ | 0.019 UJ | 0.024 UJ | 0.006 J | 0.026 UJ | 0.011 UJ | 0.011 UJ | 0.013 UJ | 0.019 UJ | 0.0087 UJ | 0.0031 J | 0.0082 UJ | 0.0017 J | 0.0089 UJ | 0.01 UJ | 0.0097 UJ |
| PEST/PCB | ENDRIN KETONE | MG/KG | 0.03 UJ | 0.027 UJ | 0.016 UJ | 0.029 UJ | 0.018 UJ | 0.018 UJ | 0.019 UJ | 0.024 UJ | 0.02 UJ | 0.026 UJ | 0.011 UJ | 0.011 UJ | 0.013 UJ | 0.019 UJ | 0.0087 UJ | 0.015 UJ | 0.0082 UJ | 0.008 UJ | 0.0089 UJ | 0.01 UJ | 0.0097 UJ |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | 0.015 UJ | 0.014 UJ | 0.0083 UJ | 0.015 UJ | 0.0094 UJ | 0.0092 UJ | 0.0096 UJ | 0.012 UJ | 0.011 UJ | 0.013 UJ | 0.0056 UJ | 0.0058 UJ | 0.0068 UJ | 0.01 UJ | 0.0045 UJ | 0.0075 UJ | 0.0042 UJ | 0.0041 UJ | 0.0046 UJ | 0.0051 UJ | 0.005 UJ |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | 0.015 UJ | 0.014 UJ | 0.0042 J | 0.015 UJ | 0.0094 UJ | 0.0092 UJ | 0.0096 UJ | 0.0092 J | 0.018 J | 0.013 UJ | 0.0045 J | 0.0059 J | 0.0028 J | 0.0075 J | 0.0014 J | 0.021 J | 0.0042 UJ | 0.0041 UJ | 0.0034 J | 0.0037 J | 0.0079 J |
| PEST/PCB | HEPTACHLOR | MG/KG | 0.015 UJ | 0.014 UJ | 0.0083 UJ | 0.015 UJ | 0.0094 UJ | 0.0092 UJ | 0.0096 UJ | 0.012 UJ | 0.011 UJ | 0.013 UJ | 0.0056 UJ | 0.0058 UJ | 0.0068 UJ | 0.01 UJ | 0.0045 UJ | 0.0075 UJ | 0.0042 UJ | 0.0041 UJ | 0.0046 UJ | 0.0051 UJ | 0.005 UJ |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | 0.015 UJ | 0.014 UJ | 0.0083 UJ | 0.015 UJ | 0.0094 UJ | 0.0092 UJ | 0.0096 UJ | 0.012 UJ | 0.011 UJ | 0.013 UJ | 0.0056 UJ | 0.0058 UJ | 0.0068 UJ | 0.01 UJ | 0.0045 UJ | 0.0075 UJ | 0.0042 UJ | 0.0041 UJ | 0.0046 UJ | 0.0051 UJ | 0.005 UJ |
| PEST/PCB | METHOXYCHLOR | MG/KG | 0.15 UJ | 0.14 UJ | 0.083 UJ | 0.15 UJ | 0.094 UJ | 0.092 UJ | 0.096 UJ | 0.12 UJ | 0.011 UJ | 0.013 UJ | 0.056 UJ | 0.058 UJ | 0.068 UJ | 0.1 UJ | 0.045 UJ | 0.075 UJ | 0.042 UJ | 0.0041 J | 0.0029 J | 0.051 UJ | 0.0078 J |
| PEST/PCB | TOXAPHENE | MG/KG | 1.5 UJ | 1.4 UJ | 0.83 UJ | 1.5 UJ | 0.94 UJ | 0.92 UJ | 0.96 UJ | 1.2 UJ | 1.1 UJ | 1.3 UJ | 0.56 UJ | 0.58 UJ | 0.68 UJ | 1 UJ | 0.45 UJ | 0.75 UJ | 0.42 UJ | 0.41 UJ | 0.46 UJ | 0.51 UJ | 0.5 UJ |
| SVOC | 1,1'-BIPHENYL | MG/KG | 1.5 UJ | 1.4 UJ | 1.6 UJ | 1.4 UJ | 1.8 UJ | 1.8 UJ | 1.9 UJ | 2.4 UJ | 2 UJ | 2.6 UJ | 2.2 UJ | 2.3 UJ | 2.6 UJ | 3.7 UJ | 1.8 UJ | 3.1 UJ | 1.6 UJ | 1.6 UJ | 1.8 UJ | 1.9 UJ | 1.9 UJ |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.8 UJ | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.95 UJ |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | 1.9 UJ | 1.7 UJ | 2 UJ | 1.8 UJ | 2.3 UJ | 2.3 UJ | 2.4 UJ | 3 UJ | 2.6 UJ | 3.2 UJ | 2.8 UJ | 2.9 UJ | 3.3 UJ | 4.7 UJ | 2.2 UJ | 3.9 UJ | 2 UJ | 2 UJ | 2.3 UJ | 2.4 UJ | 2.4 UJ |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.8 UJ | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.95 UJ |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.8 UJ | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.95 UJ |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.8 UJ | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.95 UJ |
| SVOC | 2,4-DINITROPHENOL | MG/KG | 1.9 UJ | 1.7 UJ | 2 UJ | 1.8 UJ | 2.3 UJ | 2.3 UJ | 2.4 UJ | 3 UJ | 2.6 UJ | 3.2 UJ | 2.8 UJ | 2.9 UJ | 3.3 UJ | 4.7 UJ | 2.2 UJ | 3.9 UJ | 2 UJ | 2 UJ | 2.3 UJ | 2.4 UJ | 2.4 UJ |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.8 UJ | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.95 UJ |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.8 UJ | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.95 UJ |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.8 UJ | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.95 UJ |
| SVOC | 2-CHLOROPHENOL | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.8 UJ | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.95 UJ |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.8 UJ | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.95 UJ |
| SVOC | 2-METHYLPHENOL | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.028 J | 0.055 J | 0.15 J | 0.33 J | 0.95 UJ |
| SVOC | 2-NITROANILINE | MG/KG | 1.9 UJ | 1.7 UJ | 2 UJ | 1.8 UJ | 2.3 UJ | 2.3 UJ | 2.4 UJ | 3 UJ | 2.6 UJ | 3.2 UJ | 2.8 UJ | 2.9 UJ | 3.3 UJ | 4.7 UJ | 2.2 UJ | 3.9 UJ | 2 UJ | 2 UJ | 2.3 UJ | 2.4 UJ | 2.4 UJ |
| SVOC | 2-NITROPHENOL | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.8 UJ | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.95 UJ |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.8 UJ | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.95 UJ |
| SVOC | 3-NITROANILINE | MG/KG | 1.9 UJ | 1.7 UJ | 2 UJ | 1.8 UJ | 2.3 UJ | 2.3 UJ | 2.4 UJ | 3 UJ | 2.6 UJ | 3.2 UJ | 2.8 UJ | 2.9 UJ | 3.3 UJ | 4.7 UJ | 2.2 UJ | 3.9 UJ | 2 UJ | 2 UJ | 2.3 UJ | 2.4 UJ | 2.4 UJ |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | 1.9 UJ | 1.7 UJ | 2 UJ | 1.8 UJ | 2.3 UJ | 2.3 UJ | 2.4 UJ | 3 UJ | 2.6 UJ | 3.2 UJ | 2.8 UJ | 2.9 UJ | 3.3 UJ | 4.7 UJ | 2.2 UJ | 3.9 UJ | 2 UJ | 2 UJ | 2.3 UJ | 2.4 UJ | 2.4 UJ |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.8 UJ | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.95 UJ |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.8 UJ | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.95 UJ |
| SVOC | 4-CHLOROANILINE | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 0.03 J | 0.033 J | 1.3 UJ | 1.8 UJ | 0.037 J | 0.8 J | 0.043 J | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.95 UJ |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.8 UJ | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.95 UJ |
| SVOC | 4-METHYLPHENOL | MG/KG | 0.74 UJ | 0.043 J | 0.024 J | 0.029 J | 0.92 UJ | 0.9 UJ | 0.94 UJ | 0.12 J | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.025 J | 0.057 J | 0.15 J | 0.34 J | 0.95 UJ |
| SVOC | 4-NITROANILINE | MG/KG | 1.9 UJ | 1.7 UJ | 2 UJ | 1.8 UJ | 2.3 UJ | 2.3 UJ | 2.4 UJ | 3 UJ | 2.6 UJ | 3.2 UJ | 2.8 UJ | 2.9 UJ | 3.3 UJ | 4.7 UJ | 2.2 UJ | 3.9 UJ | 2 UJ | 2 UJ | 2.3 UJ | 2.4 UJ | 2.4 UJ |
| SVOC | 4-NITROPHENOL | MG/KG | 1.9 UJ | 1.7 UJ | 2 UJ | 1.8 UJ | 2.3 UJ | 2.3 UJ | 2.4 UJ | 3 UJ | 2.6 UJ | 3.2 UJ | 2.8 UJ | 2.9 UJ | 3.3 UJ | 4.7 UJ | 2.2 UJ | 3.9 UJ | 2 UJ | 2 UJ | 2.3 UJ | 2.4 UJ | 2.4 UJ |
| SVOC | ACENAPHTHENE | MG/KG | 0.044 J | 0.035 J | 0.031 J | 0.036 J | 0.037 J | 0.028 J | 0.94 UJ | 1.2 UJ | 0.034 J | 0.035 J | 1.1 UJ | 0.036 J | 1.3 UJ | 0.048 J | 0.061 J | 1.5 UJ | 0.022 J | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.033 J |
| SVOC | ACENAPHTHYLENE | MG/KG | 0.042 J | 0.04 J | 0.03 J | 0.032 J | 0.028 J | 0.9 UJ | 0.94 UJ | 1.2 UJ | 0.036 J | 0.034 J | 0.029 J | 0.055 J | 1.3 UJ | 1.8 UJ | 0.044 J | 1.5 UJ | 0.032 J | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.044 J |
| SVOC | ACETOPHENONE | MG/KG | 1.5 UJ | 1.4 UJ | 1.6 UJ | 1.4 UJ | 1.8 UJ | 1.8 UJ | 1.9 UJ | 2.4 UJ | 2 UJ | 2.6 UJ | 2.2 UJ | 2.3 UJ | 2.6 UJ | 3.7 UJ | 1.8 UJ | 3.1 UJ | 1.6 UJ | 1.6 UJ | 1.8 UJ | 1.9 UJ | 1.9 UJ |
| SVOC | ANTHRACENE | MG/KG | 0.078 J | 0.061 J | 0.051 J | 0.057 J | 0.048 J | 0.032 J | 0.94 UJ | 0.033 J | 0.066 J | 0.066 J | 0.055 J | 0.095 J | 1.3 UJ | 0.08 J | 0.12 J | 1.5 UJ | 0.065 J | 0.038 J | 0.042 J | 0.034 J | 0.064 J |
| SVOC | ATRAZINE | MG/KG | 1.5 UJ | 1.4 UJ | 1.6 UJ | 1.4 UJ | 1.8 UJ | 1.8 UJ | 1.9 UJ | 2.4 UJ | 2 UJ | 2.6 UJ | 2.2 UJ | 2.3 UJ | 2.6 UJ | 3.7 UJ | 1.8 UJ | 3.1 UJ | 1.6 UJ | 1.6 UJ | 1.8 UJ | 1.9 UJ | 1.9 UJ |
| SVOC | BENZALDEHYDE | MG/KG | 1.5 UJ | 1.4 UJ | 1.6 UJ | 1.4 UJ | 1.8 UJ | 1.8 UJ | 1.9 UJ | 2.4 UJ | 2 UJ | 2.6 UJ | 2.2 UJ | 2.3 UJ | 2.6 UJ | 3.7 UJ | 1.8 UJ | 3.1 UJ | 1.6 UJ | 1.6 UJ | 1.8 UJ | 1.9 UJ | 1.9 UJ |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.46 J | 0.33 J | 0.35 J | 0.31 J | 0.34 J | 0.27 J | 0.12 J | 0.22 J | 0.44 J | 0.5 J | 0.4 J | 0.57 J | 0.097 J | 0.41 J | 0.7 J | 0.16 J | 0.32 J | 0.2 J | 0.27 J | 0.24 J | 0.43 J |
| SVOC | BENZO(A)PYRENE | MG/KG | 0.55 J | 0.4 J | 0.37 J | 0.38 J | 0.39 J | 0.26 J | 0.14 J | 0.23 J | 0.47 J | 0.52 J | 0.39 J | 0.55 J | 0.11 J | 0.41 J | 0.7 J | 0.17 J | 0.33 J | 0.24 J | 0.3 J | 0.3 J | 0.52 J |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 1.2 J | 0.86 J | 1 J | 0.76 J | 1.1 J | 0.46 J | 0.29 J | 0.47 J | 0.86 J | 1 J | 0.86 J | 1.1 J | 0.25 J | 0.75 J | 1.3 J | 0.32 J | 0.58 J | 0.35 J | 0.43 J | 0.42 J | 0.75 J |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCSB0086 | HCSB0087 | HCSB0088 | HCSB0089 | HCSB0090 | HCSB0091 | HCSB0092 | HCSB0093 | HCSB0094 | HCSB0095 | HCSB0099 | HCSB0100 | HCSB0101 | HCSB0102 | HCSB0103 | HCSB0104 | HCSB0105 | HCSB0161 | HCSB0162 | HCSB0163 | HCSB0164 |
| | | Field Sample ID | HCSB0086-SS-AA-AB-0 | HCSB0087-SS-AA-AB-0 | HCSB0088-SS-AA-AB-0 | HCSB0089-SS-AA-AB-0 | HCSB0090-SS-AA-AB-0 | HCSB0091-SS-AA-AB-0 | HCSB0092-SS-AA-AB-0 | HCSB0093-SS-AA-AB-0 | HCSB0094-SS-AA-AB-0 | HCSB0095-SS-AA-AB-0 | HCSB0099-SS-AA-AB-0 | HCSB0100-SS-AA-AB-0 | HCSB0101-SS-AA-AB-0 | HCSB0102-SS-AA-AB-0 | HCSB0103-SS-AA-AB-0 | HCSB0104-SS-AA-AB-0 | HCSB0105-SS-AA-AB-0 | HCSB0161-SS-AA-AB-0 | HCSB0162-SS-AA-AB-0 | HCSB0163-SS-AA-AB-0 | HCSB0164-SS-AA-AB-0 |
| | | Sample Date | 6/16/05 | 6/16/05 | 6/16/05 | 6/16/05 | 6/16/05 | 6/16/05 | 6/16/05 | 6/16/05 | 6/16/05 | 6/16/05 | 6/20/05 | 6/20/05 | 6/20/05 | 6/20/05 | 6/20/05 | 6/20/05 | 6/20/05 | 7/12/05 | 7/12/05 | 7/12/05 | 7/12/05 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.091 J | 0.07 J | 0.066 J | 0.074 J | 0.069 J | 0.058 J | 0.046 J | 0.062 J | 0.12 J | 0.036 J | 1.1 UJ | 1.2 UJ | 0.042 J | 0.12 J | 0.15 J | 1.5 UJ | 0.08 J | 0.14 J | 0.18 J | 0.16 J | 0.26 J |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.4 J | 0.25 J | 1 J | 0.25 J | 1.1 J | 0.15 J | 0.3 J | 0.49 J | 0.24 J | 0.26 J | 0.19 J | 0.33 J | 0.25 J | 0.28 J | 0.41 J | 0.079 J | 0.16 J | 0.082 J | 0.11 J | 0.11 J | 0.26 J |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 0.059 J | 0.042 J | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 0.16 J | 0.8 UJ | 0.056 J | 0.099 J | 0.97 UJ | 0.95 UJ |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.8 UJ | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.95 UJ |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.8 UJ | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.95 UJ |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.8 UJ | 0.16 J | 0.24 J | 0.23 J | 0.23 J |
| SVOC | CAPROLACTAM | MG/KG | 1.5 UJ | 1.4 UJ | 1.6 UJ | 1.4 UJ | 1.8 UJ | 1.8 UJ | 1.9 UJ | 2.4 UJ | 2 UJ | 2.6 UJ | 2.2 UJ | 2.3 UJ | 2.6 UJ | 3.7 UJ | 1.8 UJ | 3.1 UJ | 1.6 UJ | 1.6 UJ | 1.8 UJ | 1.9 UJ | 1.9 UJ |
| SVOC | CARBAZOLE | MG/KG | 0.078 J | 0.058 J | 0.053 J | 0.056 J | 0.052 J | 0.047 J | 0.94 UJ | 1.2 UJ | 0.062 J | 0.076 J | 0.061 J | 0.1 J | 1.3 UJ | 0.073 J | 0.12 J | 1.5 UJ | 0.057 J | 0.039 J | 0.046 J | 0.056 J | 0.057 J |
| SVOC | CHRYSENE | MG/KG | 0.7 J | 0.51 J | 0.45 J | 0.45 J | 0.42 J | 0.38 J | 0.22 J | 0.3 J | 0.69 J | 0.79 J | 0.54 J | 0.79 J | 0.14 J | 0.56 J | 1 J | 0.22 J | 0.44 J | 0.28 J | 0.36 J | 0.34 J | 0.63 J |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.089 J | 0.056 J | 0.06 J | 0.059 J | 0.063 J | 0.065 J | 0.061 J | 0.09 J | 0.11 J | 0.1 J | 0.069 J | 0.087 J | 1.3 UJ | 0.099 J | 0.15 J | 0.042 J | 0.072 J | 0.053 J | 0.072 J | 0.059 J | 0.092 J |
| SVOC | DIBENZOFURAN | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.026 J | 1.5 UJ | 0.8 UJ | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.95 UJ |
| SVOC | DIETHYLPHTHALATE | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.8 UJ | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.95 UJ |
| SVOC | DIMETHYLPHTHALATE | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.8 UJ | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.95 UJ |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 0.044 J | 0.06 J | 1.3 UJ | 0.064 J | 0.12 J | 0.05 J | 0.065 J | 0.095 J | 0.063 J | 0.084 J | 0.089 J |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.8 UJ | 0.8 UJ | 0.054 J | 0.97 UJ | 0.95 UJ |
| SVOC | FLUORANTHENE | MG/KG | 1.3 J | 0.88 J | 0.81 J | 0.82 J | 0.78 J | 0.57 J | 0.22 J | 0.39 J | 1 J | 1.1 J | 0.95 J | 1.6 J | 0.22 J | 1.1 J | 2.2 J | 0.41 J | 0.96 J | 0.41 J | 0.46 J | 0.49 J | 0.9 J |
| SVOC | FLUORENE | MG/KG | 0.034 J | 0.026 J | 0.024 J | 0.022 J | 0.023 J | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 0.055 J | 1.3 UJ | 1.8 UJ | 0.071 J | 1.5 UJ | 0.041 J | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.033 J |
| SVOC | HEXACHLOROBENZENE | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.8 UJ | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.95 UJ |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.8 UJ | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.95 UJ |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.8 UJ | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.95 UJ |
| SVOC | HEXACHLOROETHANE | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.8 UJ | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.95 UJ |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.26 J | 0.18 J | 0.2 J | 0.19 J | 0.21 J | 0.18 J | 0.12 J | 0.2 J | 0.32 J | 0.39 J | 0.2 J | 0.28 J | 0.089 J | 0.29 J | 0.4 J | 0.12 J | 0.2 J | 0.14 J | 0.2 J | 0.18 J | 0.28 J |
| SVOC | ISOPHORONE | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.8 UJ | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.95 UJ |
| SVOC | NAPHTHALENE | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.8 UJ | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.95 UJ |
| SVOC | NITROBENZENE | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.8 UJ | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.95 UJ |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.8 UJ | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.95 UJ |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.8 UJ | 0.8 UJ | 0.9 UJ | 0.97 UJ | 0.95 UJ |
| SVOC | PENTACHLOROPHENOL | MG/KG | 1.9 UJ | 1.7 UJ | 2 UJ | 1.8 UJ | 2.3 UJ | 2.3 UJ | 2.4 UJ | 3 UJ | 2.6 UJ | 3.2 UJ | 2.8 UJ | 2.9 UJ | 3.3 UJ | 4.7 UJ | 2.2 UJ | 3.9 UJ | 2 UJ | 2 UJ | 2.3 UJ | 2.4 UJ | 2.4 UJ |
| SVOC | PHENANTHRENE | MG/KG | 0.5 J | 0.34 J | 0.33 J | 0.36 J | 0.32 J | 0.25 J | 0.14 J | 0.22 J | 0.42 J | 0.49 J | 0.34 J | 0.6 J | 0.088 J | 0.45 J | 0.79 J | 0.18 J | 0.4 J | 0.22 J | 0.25 J | 0.24 J | 0.42 J |
| SVOC | PHENOL | MG/KG | 0.74 UJ | 0.69 UJ | 0.8 UJ | 0.71 UJ | 0.92 UJ | 0.9 UJ | 0.94 UJ | 1.2 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.8 UJ | 0.89 UJ | 1.5 UJ | 0.8 UJ | 0.031 J | 0.9 UJ | 0.97 UJ | 0.95 UJ |
| SVOC | PYRENE | MG/KG | 0.86 J | 0.63 J | 0.61 J | 0.68 J | 0.63 J | 0.46 J | 0.26 J | 0.38 J | 0.8 J | 0.88 J | 0.69 J | 1 J | 0.18 J | 0.78 J | 1.4 J | 0.28 J | 0.66 J | 0.3 J | 0.4 J | 0.37 J | 0.65 J |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMOETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | ACETONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOFORM | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON DISULFIDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON TETRACHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROFORM | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | ETHYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | ISOPROPYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ACETATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ETHYL KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYLCYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | STYRENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TETRACHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | VINYL CHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | | | | | | | | | | | | | | | | | | | | | |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCSB0165 | HCSB0166 | HCSB0167 | HCSB0168 | HCSB0169 | HCSB0170 | HCSB0171 | HCSB0171 | HCSB0201 | HCSB0202 | HCSB0203 | HCSB0204 | HCSB0205 | HCSB0206 | HCSB0207 | HCSB0208 | HCSB0209 | HCSB0210 | HCSB0219 | HCSB0219 | HCSB0220 |
| | | Field Sample ID | HCSB0165-SS-AA-AB-0 | HCSB0166-SS-AA-AB-0 | HCSB0167-SS-AA-AB-0 | HCSB0168-SS-AA-AB-0 | HCSB0169-SS-AA-AB-0 | HCSB0170-SS-AA-AB-0 | HCSB0171-SS-AA-AB-0 | HCSB0171-SS-AA-AB-1 | HCSB0201-SS-AA-AE-0 | HCSB0202-SS-AA-AB-0 | HCSB0203-SS-AA-AB-0 | HCSB0204-SS-AA-AB-0 | HCSB0205-SS-AA-AB-0 | HCSB0206-SS-AA-AB-0 | HCSB0207-SS-AA-AB-0 | HCSB0208-SS-AA-AB-0 | HCSB0209-SS-AA-AB-0 | HCSB0210-SS-AA-AB-0 | HCSB0219-SS-AA-AB-0 | HCSB0219-SS-AD-AE-0 | HCSB0220-SS-AA-AB-0 |
| | | Sample Date | 7/13/05 | 7/13/05 | 7/13/05 | 7/13/05 | 7/13/05 | 7/13/05 | 7/13/05 | 7/13/05 | 7/27/05 | 7/27/05 | 8/1/05 | 8/1/05 | 8/1/05 | 8/1/05 | 8/1/05 | 8/1/05 | 8/1/05 | 8/1/05 | 6/21/06 | 6/21/06 | 6/21/06 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-2 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 1.5-2 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 7990 J | 12400 J | 12300 J | 10300 J | 7570 J | 13100 J | 4910 J | 3710 J | 1320 | 4900 J | 7270 J | 13100 J | 15800 J | 3170 J | 16500 J | 13700 J | 12000 J | 14100 J | 1400 | 3440 | 1690 |
| METALS | ANTIMONY | MG/KG | 1.6 J | 1.9 J | 1.3 J | 1.5 UJ | 1.1 J | 2.1 J | 1.3 UJ | 1.3 UJ | 0.44 UJ | 1.2 UJ | 0.72 UJ | 1.3 J | 1.2 UJ | 0.74 UJ | 1.5 UJ | 1.6 UJ | 1.2 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.81 UJ |
| METALS | ARSENIC | MG/KG | 285 J | 406 J | 327 J | 303 J | 109 J | 2490 J | 106 J | 81.7 J | 0.5 J | 14.1 J | 21.5 J | 32.1 J | 52.7 J | 8.6 J | 18.6 J | 14.7 J | 13.4 J | 13.3 J | 33.6 | 38.9 | 11.3 |
| METALS | BARIUM | MG/KG | 605 J | 771 J | 640 J | 557 J | 505 J | 865 J | 142 J | 118 J | 4.8 J | 108 J | 118 J | 191 J | 287 J | 60.1 J | 449 J | 283 J | 238 J | 264 J | 28.6 J | 59.6 J | 6 J |
| METALS | BERYLLIUM | MG/KG | 0.68 J | 0.88 J | 0.87 J | 0.74 J | 0.46 J | 0.87 J | 0.33 J | 0.26 J | 0.16 J | 0.54 J | 0.3 J | 0.54 J | 0.72 J | 0.18 J | 1.3 J | 0.99 J | 0.86 J | 0.74 J | 0.09 J | 0.29 J | 0.1 J |
| METALS | CADMIUM | MG/KG | 3.9 J | 4.8 J | 4.1 J | 2.9 J | 1.5 J | 2.8 J | 1.1 J | 1 J | 0.044 U | 1.6 J | 0.89 J | 1.5 J | 2.1 J | 0.53 J | 5.6 J | 3 J | 2.4 J | 2.8 J | 0.52 J | 1.3 J | 0.12 J |
| METALS | CALCIUM | MG/KG | 4230 J | 5760 J | 4760 J | 3580 J | 2250 J | 3650 J | 5300 J | 4740 J | 270 J | 13600 J | 3240 J | 3690 J | 4240 J | 3290 J | 5580 J | 5440 J | 3500 J | 3330 J | 904 J | 852 J | 166 J |
| METALS | CHROMIUM | MG/KG | 305 J | 337 J | 280 J | 228 J | 244 J | 260 J | 39.2 J | 28.4 J | 4.2 | 23.2 J | 24.9 J | 57 J | 58.9 J | 8.3 J | 48.8 J | 33.4 J | 30.3 J | 32.5 J | 12.9 | 21.1 | 9.6 |
| METALS | COBALT | MG/KG | 8.2 J | 15.4 J | 11.7 J | 10.4 J | 3.2 J | 5.2 J | 1.2 J | 1.2 J | 0.25 J | 1.9 J | 1.2 J | 1.8 J | 2.9 J | 0.62 J | 7.5 J | 3.9 J | 3.9 J | 3.9 J | 0.79 J | 4.6 J | 0.32 J |
| METALS | COPPER | MG/KG | 98.5 J | 138 J | 116 J | 105 J | 105 J | 181 J | 42.5 J | 34 J | 3.8 J | 65.4 J | 49.4 J | 88 J | 111 J | 10.5 J | 173 J | 92.8 J | 71 J | 135 J | 11.2 | 30.7 | 7.2 |
| METALS | CYANIDE | MG/KG | 87.8 J | 18 J | 12.5 J | 13.6 J | 2.1 UJ | 6 J | 3.3 UJ | 10.4 J | 0.21 J | 1.4 J | 2 UJ | 2.6 UJ | 3.5 UJ | 2.2 UJ | 4.6 UJ | 4 UJ | 4.6 J | 4.6 UJ | 0.05 U | 0.06 U | 0.04 U |
| METALS | IRON | MG/KG | 30900 J | 48900 J | 41200 J | 36700 J | 15400 J | 61700 J | 11600 J | 9510 J | 3360 | 10700 J | 5980 J | 10200 J | 17200 J | 3190 J | 27600 J | 22100 J | 19800 J | 18500 J | 3200 | 6780 J | 8450 J |
| METALS | LEAD | MG/KG | 2780 J | 3270 J | 2900 J | 2450 J | 2870 J | 3660 J | 537 J | 410 J | 11.4 | 206 J | 335 J | 894 J | 631 J | 61.1 J | 212 J | 128 J | 133 J | 146 J | 107 | 288 | 58 |
| METALS | MAGNESIUM | MG/KG | 805 J | 1150 J | 1120 J | 913 J | 587 J | 955 J | 668 J | 535 J | 79.1 J | 716 J | 237 J | 363 J | 573 J | 140 J | 611 J | 483 J | 381 J | 443 J | 182 J | 174 J | 73.2 J |
| METALS | MANGANESE | MG/KG | 799 J | 1360 J | 842 J | 661 J | 162 J | 188 J | 36.9 J | 51 J | 5.1 | 167 J | 27.4 J | 34.5 J | 48.9 J | 23.2 J | 94.7 J | 96.5 J | 65.4 J | 69.2 J | 13.8 | 12.6 | 6.5 |
| METALS | MERCURY | MG/KG | 0.375 J | 0.73 J | 0.795 J | 0.925 J | 0.512 J | 1.2 J | 0.291 J | 0.25 J | 0.053 J | 0.37 J | 0.145 J | 0.303 J | 0.595 J | 0.053 J | 1.5 J | 0.986 J | 0.352 J | 0.967 J | 0.08 J | 0.15 J | 0.06 J |
| METALS | NICKEL | MG/KG | 13.3 J | 18.1 J | 16.2 J | 12.4 J | 7.2 J | 14.3 J | 5 J | 4.4 J | 0.79 J | 13.7 J | 3.8 J | 6.5 J | 9.6 J | 1.9 J | 20.8 J | 10.6 J | 11 J | 12.4 J | 2.4 J | 5.4 J | 0.97 J |
| METALS | POTASSIUM | MG/KG | 433 J | 589 J | 614 J | 501 J | 363 J | 588 J | 369 J | 307 J | 101 J | 438 J | 198 J | 279 J | 390 J | 139 J | 520 J | 338 J | 364 J | 360 J | 56.8 J | 67.6 J | 28.3 J |
| METALS | SELENIUM | MG/KG | 2.3 UJ | 3.8 J | 3.3 J | 2.9 J | 1.5 J | 3.6 J | 2.2 UJ | 2.2 UJ | 0.39 UJ | 2.5 J | 1.4 J | 3 J | 3.3 J | 0.78 UJ | 5.4 J | 4.1 J | 3.4 J | 3.9 J | 1.3 U | 1.5 U | 1 U |
| METALS | SILVER | MG/KG | 0.44 UJ | 0.45 UJ | 0.37 UJ | 0.47 UJ | 0.25 UJ | 0.52 UJ | 0.42 UJ | 0.42 UJ | 0.052 U | 0.53 J | 0.49 J | 0.94 J | 1.4 J | 0.19 J | 2.5 J | 1.1 J | 0.94 J | 2 J | 0.23 U | 0.27 U | 0.18 U |
| METALS | SODIUM | MG/KG | 112 J | 124 J | 124 J | 58.3 UJ | 74.7 J | 65 UJ | 52.4 UJ | 51.9 UJ | 18.3 U | 152 J | 42.3 J | 61.5 J | 110 J | 41.8 UJ | 142 J | 124 J | 127 J | 137 J | 47.8 U | 55.4 U | 36.7 U |
| METALS | THALLIUM | MG/KG | 1.7 UJ | 1.7 UJ | 1.4 UJ | 1.8 UJ | 0.96 UJ | 2 UJ | 1.6 UJ | 1.6 UJ | 0.31 U | 0.88 UJ | 0.56 UJ | 0.71 UJ | 0.94 UJ | 0.58 UJ | 1.1 UJ | 1.2 UJ | 0.96 UJ | 1.1 UJ | 1.1 U | 1.3 U | 0.84 U |
| METALS | VANADIUM | MG/KG | 26 J | 38.7 J | 39.4 J | 32.1 J | 21.6 J | 42.9 J | 14.5 J | 11.9 J | 5.1 J | 14.9 J | 12 J | 19.5 J | 38 J | 6.3 J | 46.9 J | 32.3 J | 35.1 J | 36.4 J | 5.7 J | 13.8 J | 8.8 J |
| METALS | ZINC | MG/KG | 407 J | 449 J | 380 J | 280 J | 150 J | 249 J | 81.5 J | 76.7 J | 10.9 | 540 J | 85.3 J | 126 J | 193 J | 29.9 J | 594 J | 171 J | 231 J | 287 J | 33.9 | 137 | 13 |
| PEST/PCB | 4,4'-DDD | MG/KG | 0.0034 J | 0.0029 J | 0.0018 J | 0.012 UJ | 0.0028 J | 0.0019 J | 0.011 UJ | 0.0012 J | 0.0034 UJ | 0.0097 UJ | 0.0052 J | 0.011 J | 0.044 J | 0.0025 J | 0.036 J | 0.025 J | 0.039 J | 0.062 J | R | 0.034 | 0.0036 U |
| PEST/PCB | 4,4'-DDE | MG/KG | 0.0058 J | 0.012 UJ | 0.0045 J | 0.012 UJ | 0.0059 J | 0.0047 J | 0.0026 J | 0.0031 J | 0.0039 J | 0.0097 UJ | 0.0069 J | 0.015 J | 0.036 J | 0.0024 J | 0.11 J | 0.057 J | 0.033 J | 0.078 J | R | 0.018 | 0.0036 U |
| PEST/PCB | 4,4'-DDT | MG/KG | 0.011 UJ | 0.012 UJ | 0.011 UJ | 0.012 UJ | 0.0073 UJ | 0.013 UJ | 0.011 UJ | 0.011 UJ | 0.0048 J | 0.0097 UJ | 0.0067 UJ | 0.0089 UJ | 0.013 UJ | 0.008 UJ | 0.016 UJ | 0.015 UJ | 0.013 UJ | 0.015 UJ | R | 0.01 J | 0.0036 UJ |
| PEST/PCB | ALDRIN | MG/KG | 0.0057 UJ | 0.0063 UJ | 0.0055 UJ | 0.0063 UJ | 0.0038 UJ | 0.0069 UJ | 0.0055 UJ | 0.0054 UJ | 0.0018 UJ | 0.005 UJ | 0.0034 UJ | 0.0046 UJ | 0.0067 UJ | 0.0041 UJ | 0.008 UJ | 0.0075 UJ | 0.0067 UJ | 0.008 UJ | R | 0.0028 U | 0.0019 UJ |
| PEST/PCB | ALPHA-BHC | MG/KG | 0.0057 UJ | 0.0063 UJ | 0.0055 UJ | 0.0063 UJ | 0.0038 UJ | 0.0069 UJ | 0.0055 UJ | 0.0054 UJ | 0.0018 UJ | 0.005 UJ | 0.0034 UJ | 0.0046 UJ | 0.0067 UJ | 0.0041 UJ | 0.008 UJ | 0.0075 UJ | 0.0067 UJ | 0.008 UJ | R | 0.0028 U | 0.022 |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | 0.0057 UJ | 0.0079 J | 0.0055 UJ | 0.0063 UJ | R | 0.0069 UJ | 0.0055 UJ | 0.0054 UJ | 0.0018 UJ | 0.005 UJ | 0.0076 J | 0.012 J | 0.023 J | 0.0041 UJ | 0.041 J | 0.0075 UJ | 0.0095 J | 0.053 J | R | 0.0028 U | 0.0019 U |
| PEST/PCB | AROCLOR-1016 | MG/KG | 0.11 UJ | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.073 UJ | 0.13 UJ | 0.11 UJ | 0.11 UJ | 0.034 UJ | 0.097 UJ | 0.067 UJ | 0.089 UJ | 0.13 UJ | 0.08 UJ | 0.16 UJ | 0.15 UJ | 0.13 UJ | 0.15 UJ | R | 0.054 U | 0.036 U |
| PEST/PCB | AROCLOR-1221 | MG/KG | 0.23 UJ | 0.25 UJ | 0.22 UJ | 0.25 UJ | 0.15 UJ | 0.27 UJ | 0.22 UJ | 0.21 UJ | 0.07 UJ | 0.2 UJ | 0.14 UJ | 0.18 UJ | 0.26 UJ | 0.16 UJ | 0.32 UJ | 0.3 UJ | 0.26 UJ | 0.31 UJ | R | 0.11 U | 0.073 U |
| PEST/PCB | AROCLOR-1232 | MG/KG | 0.11 UJ | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.073 UJ | 0.13 UJ | 0.11 UJ | 0.11 UJ | 0.034 UJ | 0.097 UJ | 0.067 UJ | 0.089 UJ | 0.13 UJ | 0.08 UJ | 0.16 UJ | 0.15 UJ | 0.13 UJ | 0.15 UJ | R | 0.054 U | 0.036 U |
| PEST/PCB | AROCLOR-1242 | MG/KG | 0.11 UJ | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.073 UJ | 0.13 UJ | 0.11 UJ | 0.11 UJ | 0.034 UJ | 0.097 UJ | 0.067 UJ | 0.089 UJ | 0.13 UJ | 0.08 UJ | 0.16 UJ | 0.15 UJ | 0.13 UJ | 0.15 UJ | R | 0.054 U | 0.036 U |
| PEST/PCB | AROCLOR-1248 | MG/KG | 0.11 UJ | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.073 UJ | 0.13 UJ | 0.11 UJ | 0.11 UJ | 0.034 UJ | 0.097 UJ | 0.067 UJ | 0.089 UJ | 0.13 UJ | 0.08 UJ | 0.16 UJ | 0.15 UJ | 0.13 UJ | 0.15 UJ | R | 0.054 U | 0.036 U |
| PEST/PCB | AROCLOR-1254 | MG/KG | 0.11 UJ | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.073 UJ | 0.13 UJ | 0.11 UJ | 0.11 UJ | 0.034 UJ | 0.097 UJ | 0.052 J | 0.099 J | 0.25 J | 0.023 J | 1.4 J | 0.69 J | 0.22 J | 0.69 J | R | 0.054 U | 0.036 U |
| PEST/PCB | AROCLOR-1260 | MG/KG | 0.11 UJ | 0.12 UJ | 0.11 UJ | 0.04 J | 0.042 J | 0.035 J | 0.11 UJ | 0.11 UJ | 0.034 UJ | 0.097 UJ | 0.067 UJ | 0.089 UJ | 0.13 UJ | 0.08 UJ | 0.16 UJ | 0.15 UJ | 0.13 UJ | 0.15 UJ | R | 0.054 U | 0.036 U |
| PEST/PCB | BETA-BHC | MG/KG | 0.0057 UJ | 0.0063 UJ | 0.0055 UJ | 0.0063 UJ | 0.0038 UJ | 0.0069 UJ | 0.0055 UJ | 0.0054 UJ | 0.0018 UJ | 0.005 UJ | 0.0034 UJ | 0.0046 UJ | 0.0067 UJ | 0.0041 UJ | 0.008 UJ | 0.0075 UJ | 0.0067 UJ | 0.0016 J | R | 0.0028 U | 0.0019 U |
| PEST/PCB | DELTA-BHC | MG/KG | 0.0057 UJ | 0.0063 UJ | 0.0055 UJ | 0.0063 UJ | 0.0038 UJ | 0.0069 UJ | 0.0055 UJ | 0.0054 UJ | 0.0018 UJ | 0.005 UJ | 0.0034 UJ | 0.0046 UJ | 0.0067 UJ | 0.0041 UJ | 0.0049 J | 0.0075 UJ | 0.0067 UJ | 0.008 UJ | R | 0.0028 U | 0.0019 U |
| PEST/PCB | DIELDRIN | MG/KG | 0.011 UJ | 0.012 UJ | 0.011 UJ | 0.012 UJ | 0.0073 UJ | 0.0015 J | 0.011 UJ | 0.011 UJ | 0.0034 UJ | 0.0097 UJ | 0.0067 UJ | 0.0089 UJ | 0.013 UJ | 0.008 UJ | R | 0.015 J | 0.0042 J | 0.018 J | R | 0.0054 U | 0.0036 UJ |
| PEST/PCB | ENDOSULFAN I | MG/KG | 0.0057 UJ | 0.0063 UJ | 0.0055 UJ | 0.0063 UJ | 0.0038 UJ | 0.0069 UJ | 0.0055 UJ | 0.0054 UJ | 0.0018 UJ | 0.005 UJ | 0.0034 UJ | 0.0046 UJ | 0.013 UJ | 0.0041 UJ | 0.008 UJ | 0.0075 UJ | 0.0067 UJ | 0.008 UJ | R | 0.0028 U | 0.0019 U |
| PEST/PCB | ENDOSULFAN II | MG/KG | 0.011 UJ | 0.012 UJ | 0.011 UJ | 0.012 UJ | 0.0073 UJ | 0.013 UJ | 0.011 UJ | 0.011 UJ | 0.0034 UJ | 0.0097 UJ | 0.0067 UJ | 0.0089 UJ | 0.013 UJ | 0.008 UJ | 0.016 UJ | 0.015 UJ | 0.013 UJ | 0.015 UJ | R | 0.0054 U | 0.0036 U |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | 0.011 UJ | 0.012 UJ | 0.011 UJ | 0.012 UJ | 0.0073 UJ | 0.013 UJ | 0.011 UJ | 0.011 UJ | 0.0034 UJ | 0.0097 UJ | 0.0067 UJ | 0.0089 UJ | 0.005 J | 0.008 UJ | 0.016 UJ | 0.015 UJ | 0.013 UJ | 0.015 UJ | R | R | 0.0036 U |
| PEST/PCB | ENDRIN | MG/KG | 0.011 UJ | 0.012 UJ | 0.011 UJ | 0.012 UJ | 0.0073 UJ | 0.013 UJ | 0.011 UJ | 0.011 UJ | 0.0034 UJ | 0.0097 UJ | 0.0067 UJ | 0.0089 UJ | 0.013 UJ | 0.008 UJ | 0.016 UJ | 0.015 UJ | 0.013 UJ | 0.015 UJ | R | 0.0054 U | 0.0036 UJ |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | 0.011 UJ | 0.0033 J | 0.011 UJ | 0.012 UJ | 0.0073 UJ | 0.013 UJ | 0.011 UJ | 0.011 UJ | 0.0034 UJ | 0.0097 UJ | 0.0013 J | 0.0025 J | 0.0054 J | 0.008 UJ | 0.016 UJ | 0.013 J | 0.013 UJ | 0.012 J | R | 0.0054 U | 0.0036 U |
| PEST/PCB | ENDRIN KETONE | MG/KG | 0.011 UJ | 0.012 UJ | 0.011 UJ | 0.012 UJ | 0.0073 UJ | 0.013 UJ | 0.011 UJ | 0.011 UJ | 0.0034 UJ | 0.0097 UJ | 0.0067 UJ | 0.0089 UJ | 0.013 UJ | 0.008 UJ | 0.08 J | 0.1 J | 0.0036 J | 0.015 UJ | R | 0.0054 U | 0.0036 U |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | 0.0057 UJ | 0.0063 UJ | 0.0055 UJ | 0.0063 UJ | 0.0038 UJ | 0.0069 UJ | 0.0055 UJ | 0.0054 UJ | 0.0018 UJ | 0.005 UJ | 0.0034 UJ | 0.0046 UJ | 0.0067 UJ | 0.0041 UJ | 0.008 UJ | 0.0075 UJ | 0.0067 UJ | 0.008 UJ | R | 0.0028 U | 0.0019 UJ |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | 0.0057 UJ | 0.0063 UJ | 0.0055 UJ | 0.0063 UJ | 0.0038 UJ | 0.0041 J | 0.0055 UJ | 0.0054 UJ | 0.0018 UJ | 0.005 UJ | 0.006 J | 0.0097 J | 0.019 J | 0.0017 J | 0.061 J | 0.038 J | 0.013 J | 0.049 J | R | 0.0028 U | 0.0019 U |
| PEST/PCB | HEPTACHLOR | MG/KG | 0.0057 UJ | 0.0063 UJ | 0.0055 UJ | 0.0063 UJ | 0.0038 UJ | 0.0069 UJ | 0.0055 UJ | 0.0054 UJ | 0.0018 UJ | 0.005 UJ | 0.0034 UJ | 0.0046 UJ | 0.0067 UJ | 0.0041 UJ | 0.008 UJ | 0.0075 UJ | 0.0067 UJ | 0.008 UJ | R | 0.0028 U | 0.0019 UJ |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | 0.0057 UJ | 0.0063 UJ | 0.0055 UJ | 0.0063 UJ | 0.0038 UJ | 0.0069 UJ | 0.0055 UJ | 0.0054 UJ | 0.0018 UJ | 0.005 UJ | 0.0034 UJ | 0.0046 UJ | 0.0067 UJ | 0.0041 UJ | 0.008 UJ | 0.0075 UJ | 0.0067 UJ | 0.008 UJ | R | 0.0028 U | 0.0019 U |
| PEST/PCB | METHOXYCHLOR | MG/KG | 0.057 UJ | 0.063 UJ | 0.055 UJ | 0.063 UJ | 0.038 UJ | 0.069 UJ | 0.055 UJ | 0.054 UJ | 0.018 UJ | 0.05 UJ | 0.034 UJ | 0.046 UJ | 0.067 UJ | 0.041 UJ | 0.08 UJ | 0.075 UJ | 0.067 UJ | 0.08 UJ | R | 0.028 U | 0.019 U |
| PEST/PCB | TOXAPHENE | MG/KG | 0.57 UJ | 0.63 UJ | 0.55 UJ | 0.63 UJ | 0.38 UJ | 0.69 UJ | 0.55 UJ | 0.54 UJ | 0.18 UJ | 0.5 UJ | 0.34 UJ | 0.46 UJ | 0.67 UJ | 0.41 UJ | 0.8 UJ | 0.75 UJ | 0.67 UJ | 0.8 UJ | R | 0.28 U | 0.19 U |
| SVOC | 1,1'-BIPHENYL | MG/KG | 11 UJ | 13 UJ | 2.2 UJ | 12 UJ | 7.1 UJ | 2.6 UJ | 2.1 UJ | 2.1 UJ | 0.34 UJ | 0.97 UJ | 1.3 UJ | 1.8 UJ | 2.6 UJ | 1.6 UJ | 3.1 UJ | 15 UJ | 2.6 UJ | 3.1 UJ | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | 14 UJ | 16 UJ | 2.7 UJ | 15 UJ | 8.9 UJ | 3.3 UJ | 2.6 UJ | 2.6 UJ | 0.86 UJ | 2.4 UJ | 1.7 UJ | 2.2 UJ | 3.2 UJ | 2 UJ | 3.9 UJ | 19 UJ | 3.3 UJ | 3.9 UJ | | | |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | 2,4-DINITROPHENOL | MG/KG | 14 UJ | 16 UJ | 2.7 UJ | 15 UJ | 8.9 UJ | 3.3 UJ | 2.6 UJ | 2.6 UJ | 0.86 UJ | 2.4 UJ | 1.7 UJ | 2.2 UJ | 3.2 UJ | 2 UJ | 3.9 UJ | 19 UJ | 3.3 UJ | 3.9 UJ | | | |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | 2-CHLOROPHENOL | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 0.046 J | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | 2-METHYLPHENOL | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | 2-NITROANILINE | MG/KG | 14 UJ | 16 UJ | 2.7 UJ | 15 UJ | 8.9 UJ | 3.3 UJ | 2.6 UJ | 2.6 UJ | 0.86 UJ | 2.4 UJ | 1.7 UJ | 2.2 UJ | 3.2 UJ | 2 UJ | 3.9 UJ | 19 UJ | 3.3 UJ | 3.9 UJ | | | |
| SVOC | 2-NITROPHENOL | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | 3-NITROANILINE | MG/KG | 14 UJ | 16 UJ | 2.7 UJ | 15 UJ | 8.9 UJ | 3.3 UJ | 2.6 UJ | 2.6 UJ | 0.86 UJ | 2.4 UJ | 1.7 UJ | 2.2 UJ | 3.2 UJ | 2 UJ | 3.9 UJ | 19 UJ | 3.3 UJ | 3.9 UJ | | | |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | 14 UJ | 16 UJ | 2.7 UJ | 15 UJ | 8.9 UJ | 3.3 UJ | 2.6 UJ | 2.6 UJ | 0.86 UJ | 2.4 UJ | 1.7 UJ | 2.2 UJ | 3.2 UJ | 2 UJ | 3.9 UJ | 19 UJ | 3.3 UJ | 3.9 UJ | | | |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | 4-CHLOROANILINE | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.4 J | 7.5 UJ | 1.3 UJ | 0.51 J | | | |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | 4-METHYLPHENOL | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 0.083 J | 1.6 UJ | | | |
| SVOC | 4-NITROANILINE | MG/KG | 14 UJ | 16 UJ | 2.7 UJ | 15 UJ | 8.9 UJ | 3.3 UJ | 2.6 UJ | 2.6 UJ | 0.86 UJ | 2.4 UJ | 1.7 UJ | 2.2 UJ | 3.2 UJ | 2 UJ | 3.9 UJ | 19 UJ | 3.3 UJ | 3.9 UJ | | | |
| SVOC | 4-NITROPHENOL | MG/KG | 14 UJ | 16 UJ | 2.7 UJ | 15 UJ | 8.9 UJ | 3.3 UJ | 2.6 UJ | 2.6 UJ | 0.86 UJ | 2.4 UJ | 1.7 UJ | 2.2 UJ | 3.2 UJ | 2 UJ | 3.9 UJ | 19 UJ | 3.3 UJ | 3.9 UJ | | | |
| SVOC | ACENAPHTHENE | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 0.036 J | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | 0.013 J | 0.67 J | 0.17 J |
| SVOC | ACENAPHTHYLENE | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 0.062 J | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | 0.018 J | 0.89 J | 0.057 J |
| SVOC | ACETOPHENONE | MG/KG | 11 UJ | 13 UJ | 2.2 UJ | 12 UJ | 7.1 UJ | 2.6 UJ | 2.1 UJ | 2.1 UJ | 0.34 UJ | 0.97 UJ | 1.3 UJ | 1.8 UJ | 2.6 UJ | 1.6 UJ | 3.1 UJ | 15 UJ | 2.6 UJ | 3.1 UJ | | | |
| SVOC | ANTHRACENE | MG/KG | 5.7 UJ | 6.3 UJ | 0.038 J | 6 UJ | 3.5 UJ | 0.091 J | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 0.04 J | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | 0.028 J | 1.9 J | 0.22 J |
| SVOC | ATRAZINE | MG/KG | 11 UJ | 13 UJ | 2.2 UJ | 12 UJ | 7.1 UJ | 2.6 UJ | 2.1 UJ | 2.1 UJ | 0.34 UJ | 0.97 UJ | 1.3 UJ | 1.8 UJ | 2.6 UJ | 1.6 UJ | 3.1 UJ | 15 UJ | 2.6 UJ | 3.1 UJ | | | |
| SVOC | BENZALDEHYDE | MG/KG | 11 UJ | 13 UJ | 2.2 UJ | 12 UJ | 7.1 UJ | 2.6 UJ | 2.1 UJ | 2.1 UJ | 0.34 UJ | 0.97 UJ | 1.3 UJ | 1.8 UJ | 2.6 UJ | 1.6 UJ | 3.1 UJ | 15 UJ | 2.6 UJ | 3.1 UJ | | | |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.55 J | 0.8 J | 0.29 J | 0.41 J | 0.14 J | 0.69 J | 0.072 J | 0.087 J | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.048 J | 0.21 J | 0.78 UJ | 0.15 J | 7.5 UJ | 0.081 J | 0.14 J | 0.15 J | 6.2 | 0.82 |
| SVOC | BENZO(A)PYRENE | MG/KG | 0.58 J | 0.87 J | 0.34 J | 0.42 J | 0.16 J | 0.68 J | 0.054 J | 0.068 J | 0.34 UJ | 0.97 UJ | 0.062 J | 0.042 J | 0.22 J | 0.78 UJ | 0.15 J | 7.5 UJ | 0.091 J | 0.16 J | 0.17 J | 7.2 | 0.79 |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 0.99 J | 1.2 J | 0.67 J | 0.69 J | 0.22 J | 1.1 J | 0.14 J | 0.11 J | 0.037 J | 0.97 UJ | 0.056 J | 0.067 J | 0.39 J | 0.78 UJ | 0.18 J | 7.5 UJ | 0.12 J | 0.2 J | 0.2 J | 6.2 | 0.64 J |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCSB0165 | HCSB0166 | HCSB0167 | HCSB0168 | HCSB0169 | HCSB0170 | HCSB0171 | HCSB0171 | HCSB0201 | HCSB0202 | HCSB0203 | HCSB0204 | HCSB0205 | HCSB0206 | HCSB0207 | HCSB0208 | HCSB0209 | HCSB0210 | HCSB0219 | HCSB0219 | HCSB0220 |
| | | Field Sample ID | HCSB0165-SS-AA-AB-0 | HCSB0166-SS-AA-AB-0 | HCSB0167-SS-AA-AB-0 | HCSB0168-SS-AA-AB-0 | HCSB0169-SS-AA-AB-0 | HCSB0170-SS-AA-AB-0 | HCSB0171-SS-AA-AB-0 | HCSB0171-SS-AA-AB-1 | HCSB0201-SS-AA-AE-0 | HCSB0202-SS-AA-AB-0 | HCSB0203-SS-AA-AB-0 | HCSB0204-SS-AA-AB-0 | HCSB0205-SS-AA-AB-0 | HCSB0206-SS-AA-AB-0 | HCSB0207-SS-AA-AB-0 | HCSB0208-SS-AA-AB-0 | HCSB0209-SS-AA-AB-0 | HCSB0210-SS-AA-AB-0 | HCSB0219-SS-AA-AB-0 | HCSB0219-SS-AD-AE-0 | HCSB0220-SS-AA-AB-0 |
| | | Sample Date | 7/13/05 | 7/13/05 | 7/13/05 | 7/13/05 | 7/13/05 | 7/13/05 | 7/13/05 | 7/13/05 | 7/27/05 | 7/27/05 | 8/1/05 | 8/1/05 | 8/1/05 | 8/1/05 | 8/1/05 | 8/1/05 | 8/1/05 | 8/1/05 | 6/21/06 | 6/21/06 | 6/21/06 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-2 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 1.5-2 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.51 J | 0.57 J | 0.23 J | 0.34 J | 0.096 J | 0.62 J | 0.063 J | 0.067 J | 0.34 UJ | 0.97 UJ | 0.017 J | 0.029 J | 0.15 J | 0.78 UJ | 1.6 UJ | 7.5 UJ | 0.052 J | 0.091 J | 0.097 J | 3.5 J | 0.37 J |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.27 J | 0.28 J | 0.68 J | 0.19 J | 3.5 UJ | 0.4 J | 0.14 J | 0.046 J | 0.34 UJ | 0.97 UJ | 0.046 J | 0.88 UJ | 0.4 J | 0.78 UJ | 0.11 J | 7.5 UJ | 0.037 J | 0.073 J | 0.2 J | 8.4 | 0.96 |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | 5.7 UJ | 6.3 UJ | 0.06 J | 6 UJ | 3.5 UJ | 0.11 J | 0.061 J | 0.074 J | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.12 J | 0.17 J | 0.4 J | 0.78 UJ | 4.6 J | 2 J | 1.3 UJ | 0.51 J | | | |
| SVOC | CAPROLACTAM | MG/KG | 11 UJ | 13 UJ | 2.2 UJ | 12 UJ | 7.1 UJ | 2.6 UJ | 2.1 UJ | 2.1 UJ | 0.34 UJ | 0.97 UJ | 1.3 UJ | 1.8 UJ | 2.6 UJ | 1.6 UJ | 3.1 UJ | 15 UJ | 2.6 UJ | 3.1 UJ | | | |
| SVOC | CARBAZOLE | MG/KG | 5.7 UJ | 6.3 UJ | 0.041 J | 6 UJ | 3.5 UJ | 0.086 J | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | CHRYSENE | MG/KG | 0.88 J | 0.95 J | 0.41 J | 0.57 J | 0.18 J | 0.97 J | 0.08 J | 0.11 J | 0.34 UJ | 0.97 UJ | 0.024 J | 0.057 J | 0.27 J | 0.78 UJ | 0.18 J | 7.5 UJ | 0.1 J | 0.15 J | 0.22 J | 7.3 | 0.97 |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.16 J | 0.22 J | 0.066 J | 6 UJ | 3.5 UJ | 0.19 J | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 0.084 J | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | 0.039 J | 1.3 J | 0.15 J |
| SVOC | DIBENZOFURAN | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | DIETHYLPHTHALATE | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | DIMETHYLPHTHALATE | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | 5.7 UJ | 6.3 UJ | 0.039 J | 6 UJ | 3.5 UJ | 1.3 UJ | 0.06 J | 0.086 J | 0.34 UJ | 0.97 UJ | 0.033 J | 0.059 J | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 0.038 J | 1.6 UJ | | | |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | FLUORANTHENE | MG/KG | 1.3 J | 1.5 J | 0.6 J | 0.84 J | 0.24 J | 1.4 J | 0.099 J | 0.13 J | 0.05 J | 0.97 UJ | 0.043 J | 0.07 J | 0.44 J | 0.78 UJ | 0.36 J | 0.21 J | 0.14 J | 0.21 J | 0.37 J | 15 | 2 |
| SVOC | FLUORENE | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 0.049 J | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | 0.015 J | 1.8 J | 0.16 J |
| SVOC | HEXACHLOROBENZENE | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | HEXACHLOROETHANE | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.58 J | 0.63 J | 0.24 J | 0.3 J | 3.5 UJ | 0.62 J | 0.066 J | 0.075 J | 0.34 UJ | 0.97 UJ | 0.021 J | 0.035 J | 0.16 J | 0.78 UJ | 1.6 UJ | 7.5 UJ | 0.082 J | 0.085 J | 0.098 J | 3.6 J | 0.39 J |
| SVOC | ISOPHORONE | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | NAPHTHALENE | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | 0.94 U | 0.37 J | 0.019 J |
| SVOC | NITROBENZENE | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | PENTACHLOROPHENOL | MG/KG | 14 UJ | 16 UJ | 2.7 UJ | 15 UJ | 8.9 UJ | 3.3 UJ | 2.6 UJ | 2.6 UJ | 0.86 UJ | 2.4 UJ | 1.7 UJ | 2.2 UJ | 3.2 UJ | 2 UJ | 3.9 UJ | 19 UJ | 3.3 UJ | 3.9 UJ | | | |
| SVOC | PHENANTHRENE | MG/KG | 0.59 J | 0.63 J | 0.27 J | 0.36 J | 0.11 J | 0.48 J | 0.054 J | 0.075 J | 0.34 UJ | 0.97 UJ | 0.033 J | 0.049 J | 0.23 J | 0.78 UJ | 0.16 J | 7.5 UJ | 0.085 J | 0.14 J | 0.18 J | 11 | 1.2 |
| SVOC | PHENOL | MG/KG | 5.7 UJ | 6.3 UJ | 1.1 UJ | 6 UJ | 3.5 UJ | 1.3 UJ | 1 UJ | 1 UJ | 0.34 UJ | 0.97 UJ | 0.66 UJ | 0.88 UJ | 1.3 UJ | 0.78 UJ | 1.6 UJ | 7.5 UJ | 1.3 UJ | 1.6 UJ | | | |
| SVOC | PYRENE | MG/KG | 1.2 J | 1.6 J | 0.5 J | 0.86 J | 0.29 J | 1.2 J | 0.094 J | 0.14 J | 0.041 J | 0.97 UJ | 0.04 J | 0.076 J | 0.35 J | 0.78 UJ | 0.21 J | 0.24 J | 0.14 J | 0.18 J | 0.32 J | 13 | 1.5 |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | | | | | | | | | 0.011 UJ | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHANE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHENE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | | | | | | | | | R | | | | | | | | | | | | |
| VOC | 1,2-DIBROMOETHANE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROETHANE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | ACETONE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | BENZENE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | BROMOFORM | MG/KG | | | | | | | | | 0.011 UJ | | | | | | | | | | | | |
| VOC | BROMOMETHANE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | CARBON DISULFIDE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | CARBON TETRACHLORIDE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | CHLOROBENZENE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | CHLOROETHANE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | CHLOROFORM | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | CHLOROMETHANE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | CYCLOHEXANE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | DICHLOROMETHANE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | ETHYLBENZENE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | ISOPROPYLBENZENE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | METHYL ACETATE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | METHYL ETHYL KETONE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | METHYLCYCLOHEXANE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | STYRENE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | TETRACHLOROETHENE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | TOLUENE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | VINYL CHLORIDE | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | | | | | | | | | 0.011 U | | | | | | | | | | | | |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCSB0220 | HCSB0221 | HCSB0222 | HCSB0222 | HCSB0223 | HCSB0223 | HCSB0224 | HCSB0225 | HCSB0225 | HCSB0226 | HCSB0227 | HCSB0228 | HCSB0229 | HCSB0230 | HCSB0230 | HCSB0231 | HCSB0232 | HCSB0233 | HCSB0234 | HCSB0234 | HCSB0234 |
| | | Field Sample ID | HCSB0220-SS-AD-AE-0 | HCSB0221-SS-AA-AB-0 | HCSB0222-SS-AA-AB-0 | HCSB0222-SS-AA-AB-1 | HCSB0223-SS-AA-AB-0 | HCSB0223-SS-AD-AE-0 | HCSB0224-SS-AA-AB-0 | HCSB0225-SS-AA-AB-0 | HCSB0225-SS-AD-AE-0 | HCSB0226-SS-AA-AB-0 | HCSB0227-SS-AA-AB-0 | HCSB0228-SS-AA-AB-0 | HCSB0229-SS-AA-AB-0 | HCSB0230-SS-AA-AB-0 | HCSB0230-SS-AA-AB-1 | HCSB0231-SS-AA-AB-0 | HCSB0232-SS-AA-AB-0 | HCSB0233-SS-AA-AB-0 | HCSB0234-SS-AA-AB-0 | HCSB0234-SS-AA-AB-1 | HCSB0234-SS-AC-AD-0 |
| | | Sample Date | 6/21/06 | 6/27/06 | 6/27/06 | 6/27/06 | 7/6/06 | 6/27/06 | 6/27/06 | 6/28/06 | 6/29/06 | 6/28/06 | 6/28/06 | 6/29/06 | 6/29/06 | 6/29/06 | 6/29/06 | 7/5/06 | 7/5/06 | 7/6/06 | 7/6/06 | 7/6/06 | 7/6/06 |
| | | Depth (ft) | 1.5-2 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 1.5-2 | 0-0.5 | 0-0.5 | 1.5-2 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 1-1.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 1120 | 3830 | 1940 | 1880 | 1690 | 1290 | 1230 | 5050 | 3200 | 9440 J | 6580 J | 6850 J | 12100 J | 5610 J | 5640 J | 16000 J | 12400 J | 17000 J | 566 | 555 | 804 |
| METALS | ANTIMONY | MG/KG | 0.86 UJ | 3 J | 4.6 J | 3.7 J | 0.95 UJ | 0.84 UJ | 0.95 UJ | 1.7 J | 0.85 UJ | 14.5 J | 8.5 J | 5.1 J | 10.5 J | 2 J | 3.6 J | 14.8 J | 17.7 J | 21 J | 1 UJ | 1.1 UJ | 0.97 UJ |
| METALS | ARSENIC | MG/KG | 10 | 13.4 | 19.3 J | 28.8 J | 1.1 J | 2.1 J | 1.7 J | 6.1 J | 1.5 J | 803 J | 380 J | 311 J | 2570 J | 62.5 J | 104 J | 2150 J | 4880 J | 2350 J | 1.1 J | 1.6 J | 1.1 J |
| METALS | BARIUM | MG/KG | 14.7 J | 45.4 J | 301 | 179 J | 9.1 J | 6.7 J | 8.5 J | 25 J | 3.9 J | 11300 J | 3490 J | 4800 J | 7500 J | 1430 J | 2190 J | 8270 J | 14100 J | 22600 J | 7.1 J | 6.5 J | 3.9 J |
| METALS | BERYLLIUM | MG/KG | 0.09 J | 0.23 J | 0.16 J | 0.16 J | 0.02 U | 0.07 J | 0.1 J | 0.14 J | 0.06 J | 0.7 J | 0.5 J | 0.53 J | 0.72 J | 0.25 J | 0.28 J | 0.95 J | 0.73 J | 0.73 J | 0.03 U | 0.03 U | 0.02 U |
| METALS | CADMIUM | MG/KG | 0.44 J | 1.3 J | 1.4 | 1.1 J | 0.1 J | 0.06 U | 0.07 U | 0.08 U | 0.06 U | 10.2 J | 1.9 J | 2.4 J | 8.6 J | 0.1 UJ | 0.1 UJ | 2.7 J | 4.7 J | 5.8 J | 0.05 U | 0.05 U | 0.05 U |
| METALS | CALCIUM | MG/KG | 415 J | 953 J | 694 J | 652 J | 480 J | 144 J | 172 J | 2120 | 103 J | 10500 J | 2020 J | 4330 J | 7340 J | 2370 J | 2030 J | 9200 J | 10800 J | 5810 J | 59.1 J | 36.9 J | 22.6 J |
| METALS | CHROMIUM | MG/KG | 6.5 | 16.4 | 29.4 | 23.5 J | 3.1 | 4.5 | 6.6 J | 11.6 | 6.4 | 2400 J | 620 J | 749 J | 2250 J | 354 J | 532 J | 2180 J | 2750 J | 5150 J | 1.7 J | 2.1 J | 2.2 J |
| METALS | COBALT | MG/KG | 0.49 J | 0.9 J | 6.5 J | 4.3 J | 0.24 J | 0.18 U | 0.2 J | 0.43 J | 0.18 U | 9.7 J | 8.9 J | 10.9 J | 13.4 J | 0.61 J | 0.88 J | 14.9 J | 12.7 J | 10.8 J | 0.21 U | 0.21 U | 0.19 U |
| METALS | COPPER | MG/KG | 7.8 | 103 | 77.2 | 61.1 J | 4.3 J | 3.3 J | 3.2 J | 8.9 | 0.64 J | 259 J | 88.6 J | 95.6 J | 593 J | 22.6 J | 29.6 J | 292 J | 289 J | 780 J | 3.4 J | 2.8 J | 0.26 J |
| METALS | CYANIDE | MG/KG | 0.04 U | 0.07 U | 0.6 J | 0.87 | 0.05 U | 0.04 U | 0.05 U | 0.58 J | 0.04 U | 298 J | 87 J | 98.3 J | 117 J | 60.9 J | 29.3 J | 183 J | 94.2 J | 110 J | 21.5 | 21.3 | 0.05 U |
| METALS | IRON | MG/KG | 3820 J | 17500 | 81200 | 55700 | 2190 | 1960 | 2910 | 12800 | 8690 | 35000 J | 44300 J | 38500 J | 61600 J | 16400 J | 23100 J | 72000 J | 103000 J | 87200 J | 693 | 647 | 1660 |
| METALS | LEAD | MG/KG | 51 | 198 | 527 | 383 | 24 | 22.4 | 18.8 | 58.4 | 5.7 | 25100 J | 4620 J | 6110 J | 20100 J | 2700 J | 3130 J | 20300 J | 33500 J | 51200 J | 30.4 | 25.8 | 3.4 |
| METALS | MAGNESIUM | MG/KG | 132 J | 242 J | 288 J | 244 J | 82.9 J | 118 J | 186 J | 184 J | 46.9 J | 688 J | 480 J | 649 J | 833 J | 94 J | 105 J | 921 J | 913 J | 574 J | 30.9 J | 10.9 J | 15.4 J |
| METALS | MANGANESE | MG/KG | 6.1 | 39.2 | 299 | 273 J | 25.2 | 8.1 | 9.5 J | 37 | 5.9 | 779 J | 525 J | 1240 J | 1140 J | 7.8 J | 9.4 J | 756 J | 879 J | 182 J | 6.3 | 6.2 | 4.4 |
| METALS | MERCURY | MG/KG | 0.06 U | 0.15 J | 0.18 | 0.2 J | 0.06 U | 0.06 U | 0.07 U | 0.16 | 0.06 U | 1.5 J | 1.3 J | 0.33 J | 0.41 J | 0.13 UJ | 0.13 UJ | 0.24 UJ | 2.9 J | 0.68 J | 0.07 U | 0.07 U | 0.06 U |
| METALS | NICKEL | MG/KG | 2 J | 8.8 J | 20.1 | 11.5 J | 1.5 J | 1.1 J | 1.1 J | 3.1 J | 0.57 J | 19.2 J | 10.1 J | 10.5 J | 31.3 J | 2.3 J | 2.3 J | 24.5 J | 17.2 J | 17.3 J | 0.61 J | 0.43 J | 0.48 J |
| METALS | POTASSIUM | MG/KG | 20 U | 204 J | 305 J | 281 J | 60.5 J | 163 J | 347 J | 128 J | 32.5 J | 257 J | 195 J | 210 J | 377 J | 80.6 J | 113 J | 389 J | 362 J | 376 J | 45.2 J | 30.4 J | 13.5 U |
| METALS | SELENIUM | MG/KG | 1.1 U | 2.4 | 2.9 | 1.4 | 1.2 U | 1.1 U | 1.2 U | 1.4 U | 1.1 U | 4.1 UJ | 2.1 UJ | 3.1 J | 7.5 J | 2.8 J | 2.4 UJ | 5.4 J | 5.5 J | 6 J | 1.3 U | 1.3 UJ | 1.2 U |
| METALS | SILVER | MG/KG | 0.19 U | 0.32 U | 0.56 J | 0.58 J | 0.26 U | 0.19 U | 0.21 U | 0.24 U | 0.19 U | 0.72 UJ | 0.37 UJ | 0.59 UJ | 0.92 UJ | 0.54 UJ | 0.55 UJ | 1.1 UJ | 1.1 UJ | 0.98 UJ | 0.28 U | 0.29 U | 0.27 U |
| METALS | SODIUM | MG/KG | 39 U | 65.6 U | 38.9 U | 40 U | 35.2 U | 38.2 U | 42.9 U | 49.5 U | 38.5 U | 147 UJ | 75.2 UJ | 79.9 UJ | 124 UJ | 244 J | 73.6 UJ | 145 UJ | 150 UJ | 132 UJ | 38.1 U | 39.1 U | 36.1 U |
| METALS | THALLIUM | MG/KG | 0.89 U | 1.5 U | 0.89 U | 0.91 U | 1.1 U | 0.87 U | 0.98 U | 1.1 U | 0.88 U | 3.4 UJ | 1.7 UJ | 2.4 UJ | 3.8 UJ | 2.2 UJ | 2.2 UJ | 4.4 UJ | 4.5 UJ | 4 UJ | 1.2 U | 1.2 UJ | 1.1 U |
| METALS | VANADIUM | MG/KG | 5.3 J | 8 J | 8.4 J | 8.6 J | 5.8 J | 4.7 J | 5.2 J | 21.7 | 6.4 J | 38.1 J | 31.4 J | 28.3 J | 43.4 J | 8.7 J | 12.1 J | 56.8 J | 41.8 J | 39.5 J | 4.5 J | 4.3 J | 2.4 J |
| METALS | ZINC | MG/KG | 50.5 | 457 | 661 | 341 J | 9 | 9.5 | 11.1 J | 28.6 | 3.8 J | 1760 J | 564 J | 623 J | 1250 J | 44.2 J | 60.9 J | 1370 J | 1500 J | 2030 J | 3 J | 3 J | 1.6 J |
| PEST/PCB | 4,4'-DDD | MG/KG | R | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDE | MG/KG | R | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDT | MG/KG | R | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALDRIN | MG/KG | R | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-BHC | MG/KG | R | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | R | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1016 | MG/KG | R | | | | | | | 0.1 U | 0.08 U | 0.3 UJ | 0.16 UJ | 0.19 UJ | 0.28 UJ | 0.17 UJ | 0.17 UJ | 0.33 UJ | 0.34 UJ | 0.3 UJ | 0.09 U | 0.092 U | 0.086 U |
| PEST/PCB | AROCLOR-1221 | MG/KG | R | | | | | | | 0.1 U | 0.08 U | 0.3 UJ | 0.16 UJ | 0.19 UJ | 0.28 UJ | 0.17 UJ | 0.17 UJ | 0.33 UJ | 0.34 UJ | 0.3 UJ | 0.09 U | 0.092 U | 0.086 U |
| PEST/PCB | AROCLOR-1232 | MG/KG | R | | | | | | | 0.1 U | 0.08 U | 0.3 UJ | 0.16 UJ | 0.19 UJ | 0.28 UJ | 0.17 UJ | 0.17 UJ | 0.33 UJ | 0.34 UJ | 0.3 UJ | 0.09 U | 0.092 U | 0.086 U |
| PEST/PCB | AROCLOR-1242 | MG/KG | R | | | | | | | 0.1 U | 0.08 U | 0.3 UJ | 0.16 UJ | 0.19 UJ | 0.28 UJ | 0.17 UJ | 0.17 UJ | 0.33 UJ | 0.34 UJ | 0.3 UJ | 0.09 U | 0.092 U | 0.086 U |
| PEST/PCB | AROCLOR-1248 | MG/KG | R | | | | | | | 0.1 U | 0.08 U | 0.3 UJ | 0.16 UJ | 0.19 UJ | 0.28 UJ | 0.17 UJ | 0.17 UJ | 0.33 UJ | 0.34 UJ | 0.3 UJ | 0.09 U | 0.092 U | 0.086 U |
| PEST/PCB | AROCLOR-1254 | MG/KG | R | | | | | | | 0.1 U | 0.08 U | 0.3 UJ | 0.16 UJ | 0.19 UJ | 0.28 UJ | 0.17 UJ | 0.17 UJ | 0.33 UJ | 0.34 UJ | 0.3 UJ | 0.09 U | 0.092 U | 0.086 U |
| PEST/PCB | AROCLOR-1260 | MG/KG | R | | | | | | | 0.1 U | 0.08 U | 0.98 J | 1.3 J | 1.1 J | 1.6 J | 0.17 UJ | 0.17 UJ | 0.33 UJ | 0.34 UJ | 0.3 UJ | 0.09 U | 0.092 U | 0.086 U |
| PEST/PCB | BETA-BHC | MG/KG | R | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DELTA-BHC | MG/KG | R | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DIELDRIN | MG/KG | R | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN I | MG/KG | R | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN II | MG/KG | R | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | R | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN | MG/KG | R | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | R | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN KETONE | MG/KG | R | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | R | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | R | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR | MG/KG | R | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | R | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | METHOXYCHLOR | MG/KG | R | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | TOXAPHENE | MG/KG | R | | | | | | | | | | | | | | | | | | | | |
| SVOC | 1,1'-BIPHENYL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | ACENAPHTHENE | MG/KG | 0.45 J | 0.64 UJ | 0.39 J | 0.69 J | 0.41 U | 0.38 UJ | 0.43 UJ | 0.51 UJ | 0.39 U | 0.095 J | 0.063 J | 0.17 J | 0.15 J | 0.85 UJ | 0.84 UJ | 0.061 J | 0.04 J | 1.5 UJ | 0.44 U | 0.45 U | 0.42 U |
| SVOC | ACENAPHTHYLENE | MG/KG | 0.24 J | 0.008 J | 0.27 J | 0.29 J | 0.41 U | 0.007 J | 0.43 UJ | 0.008 J | 0.39 U | 0.083 J | 0.053 J | 0.15 J | 0.15 J | 0.85 UJ | 0.84 UJ | 0.052 J | 0.029 J | 1.5 UJ | 0.44 U | 0.45 U | 0.42 U |
| SVOC | ACETOPHENONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | ANTHRACENE | MG/KG | 0.8 J | 0.01 J | 1.2 J | 1.9 J | 0.41 U | 0.014 J | 0.43 UJ | 0.009 J | 0.39 U | 0.16 J | 0.16 J | 0.32 J | 0.29 J | 0.009 J | 0.84 UJ | 0.14 J | 0.1 J | 0.06 J | 0.44 U | 0.45 U | 0.42 U |
| SVOC | ATRAZINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 2.6 | 0.048 J | 4.4 J | 5.8 J | 0.021 J | 0.06 J | 0.018 J | 0.043 J | 0.014 J | 0.8 J | 0.74 J | 1.8 J | 1.5 J | 0.041 J | 0.035 J | 0.74 J | 0.64 J | 0.31 J | 0.44 U | 0.45 U | 0.42 U |
| SVOC | BENZO(A)PYRENE | MG/KG | 2.6 | 0.05 J | 4.2 J | 5.3 J | 0.026 J | 0.059 J | 0.022 J | 0.044 J | 0.013 J | 1 J | 0.8 J | 2.4 J | 2 J | 0.045 J | 0.043 J | 0.84 J | 0.83 J | 0.4 J | 0.44 U | 0.45 U | 0.42 U |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 2.3 | 0.077 J | 4 J | 6.1 J | 0.029 J | 0.06 J | 0.023 J | 0.06 J | 0.014 J | 1.2 J | 0.9 J | 3.3 J | 2.5 J | 0.061 J | 0.051 J | 0.89 J | 0.89 J | 0.4 J | 0.44 U | 0.45 U | 0.42 U |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCSB0220 | HCSB0221 | HCSB0222 | HCSB0222 | HCSB0223 | HCSB0223 | HCSB0224 | HCSB0225 | HCSB0225 | HCSB0226 | HCSB0227 | HCSB0228 | HCSB0229 | HCSB0230 | HCSB0230 | HCSB0231 | HCSB0232 | HCSB0233 | HCSB0234 | HCSB0234 | HCSB0234 |
| | | Field Sample ID | HCSB0220-SS-AD-AE-0 | HCSB0221-SS-AA-AB-0 | HCSB0222-SS-AA-AB-0 | HCSB0222-SS-AA-AB-1 | HCSB0223-SS-AA-AB-0 | HCSB0223-SS-AD-AE-0 | HCSB0224-SS-AA-AB-0 | HCSB0225-SS-AA-AB-0 | HCSB0225-SS-AD-AE-0 | HCSB0226-SS-AA-AB-0 | HCSB0227-SS-AA-AB-0 | HCSB0228-SS-AA-AB-0 | HCSB0229-SS-AA-AB-0 | HCSB0230-SS-AA-AB-0 | HCSB0230-SS-AA-AB-1 | HCSB0231-SS-AA-AB-0 | HCSB0232-SS-AA-AB-0 | HCSB0233-SS-AA-AB-0 | HCSB0234-SS-AA-AB-0 | HCSB0234-SS-AA-AB-1 | HCSB0234-SS-AC-AD-0 |
| | | Sample Date | 6/21/06 | 6/27/06 | 6/27/06 | 6/27/06 | 7/6/06 | 6/27/06 | 6/27/06 | 6/28/06 | 6/29/06 | 6/28/06 | 6/28/06 | 6/29/06 | 6/29/06 | 6/29/06 | 6/29/06 | 7/5/06 | 7/5/06 | 7/6/06 | 7/6/06 | 7/6/06 | 7/6/06 |
| | | Depth (ft) | 1.5-2 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 1.5-2 | 0-0.5 | 0-0.5 | 1.5-2 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 1-1.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 1.2 J | 0.032 J | 1.4 J | 1.6 J | 0.028 J | 0.033 J | 0.014 J | 0.03 J | 0.39 U | 0.68 J | 0.48 J | 1.1 J | 0.95 J | 0.026 J | 0.021 J | 1.2 J | 1.1 J | 0.69 J | 0.44 U | 0.45 U | 0.42 U |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 2.6 | 0.064 J | 5.3 J | 5.4 J | 0.02 J | 0.069 J | 0.028 J | 0.049 J | 0.013 J | 1.2 J | 0.72 J | 2.4 J | 2.2 J | 0.057 J | 0.043 J | 0.76 J | 0.73 J | 0.3 J | 0.44 U | 0.45 U | 0.42 U |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | CAPROLACTAM | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | CARBAZOLE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | CHRYSENE | MG/KG | 3 | 0.084 J | 4.8 J | 6 J | 0.032 J | 0.077 J | 0.029 J | 0.065 J | 0.015 J | 1.3 J | 0.97 J | 2.6 J | 2.2 J | 0.063 J | 0.049 J | 1 J | 0.99 J | 0.38 J | 0.44 U | 0.45 U | 0.42 U |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.46 J | 0.011 J | 0.7 J | 0.79 J | 0.41 U | 0.011 J | 0.005 J | 0.009 J | 0.39 U | 0.19 J | 0.16 J | 0.36 J | 0.4 J | 0.012 J | 0.009 J | 0.32 J | 0.28 J | 1.5 UJ | 0.44 U | 0.45 U | 0.42 U |
| SVOC | DIBENZOFURAN | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIMETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | FLUORANTHENE | MG/KG | 6.4 | 0.12 J | 8.2 J | 11 J | 0.053 J | 0.14 J | 0.05 J | 0.11 J | 0.39 U | 2.3 J | 1.8 J | 5 J | 4.3 J | 0.1 J | 0.076 J | 1.5 J | 1.3 J | 0.53 J | 0.026 J | 0.024 J | 0.42 U |
| SVOC | FLUORENE | MG/KG | 0.59 J | 0.64 UJ | 0.37 J | 0.59 J | 0.41 U | 0.005 J | 0.43 UJ | 0.51 UJ | 0.39 U | 0.085 J | 0.074 J | 0.19 J | 0.18 J | 0.85 UJ | 0.84 UJ | 0.057 J | 0.033 J | 1.5 UJ | 0.44 U | 0.45 U | 0.42 U |
| SVOC | HEXACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 1.2 J | 0.028 J | 1.7 J | 1.9 J | 0.023 J | 0.032 J | 0.012 J | 0.026 J | 0.39 U | 0.6 J | 0.43 J | 1.1 J | 0.95 J | 0.025 J | 0.021 J | 0.98 J | 1 J | 0.47 J | 0.44 U | 0.45 U | 0.42 U |
| SVOC | ISOPHORONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | NAPHTHALENE | MG/KG | 0.088 J | 0.64 UJ | 0.52 J | 0.89 J | 0.41 U | 0.005 J | 0.43 UJ | 0.51 UJ | 0.39 U | 0.044 J | 0.07 J | 0.064 J | 0.052 J | 0.009 J | 0.84 UJ | 0.038 J | 0.033 J | 0.036 J | 0.44 U | 0.45 U | 0.42 U |
| SVOC | NITROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | PENTACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | PHENANTHRENE | MG/KG | 4 | 0.052 J | 4.3 J | 6.7 J | 0.027 J | 0.068 J | 0.025 J | 0.052 J | 0.014 J | 0.94 J | 0.79 J | 1.9 J | 1.7 J | 0.047 J | 0.039 J | 0.69 J | 0.55 J | 0.26 J | 0.018 J | 0.012 J | 0.42 U |
| SVOC | PHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | PYRENE | MG/KG | 4.5 | 0.094 J | 6.4 J | 9 J | 0.046 J | 0.11 J | 0.041 J | 0.089 J | 0.39 U | 1.6 J | 1.3 J | 3.5 J | 2.9 J | 0.09 J | 0.065 J | 1.4 J | 1.2 J | 0.57 J | 0.031 J | 0.018 J | 0.42 U |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMOETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | ACETONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOFORM | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON DISULFIDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON TETRACHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROFORM | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | ETHYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | ISOPROPYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ACETATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ETHYL KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYLCYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | STYRENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TETRACHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | VINYL CHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | | | | | | | | | | | | | | | | | | | | | |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCSB0235 | HCSB0236 | HCSB0237 | HCSB0238 | HCSB0239 | HCSB0240 | HCSB0241 | HCSB0242 | HCSB0242 | HCSB0243 | HCSB0244 | HCSB0244 | HCSB0245 | HCSB0246 | HCSB0247 | HCSB0248 | HCSB0249 | HCSB0250 | HCSB0251 | HCSB0252 | HCSB0253 |
| | | Field Sample ID | HCSB0235-SS-AA-AB-0 | HCSB0236-SS-AA-AB-0 | HCSB0237-SS-AA-AB-0 | HCSB0238-SS-AA-AB-0 | HCSB0239-SS-AA-AB-0 | HCSB0240-SS-AA-AB-0 | HCSB0241-SS-AA-AB-0 | HCSB0242-SS-AA-AB-0 | HCSB0242-SS-AA-AB-1 | HCSB0243-SS-AA-AB-0 | HCSB0244-SS-AA-AB-0 | HCSB0244-SS-AD-AE-0 | HCSB0245-SS-AA-AB-0 | HCSB0246-SS-AA-AB-0 | HCSB0247-SS-AA-AB-0 | HCSB0248-SS-AA-AB-0 | HCSB0249-SS-AA-AB-0 | HCSB0250-SS-AA-AB-0 | HCSB0251-SS-AA-AB-0 | HCSB0252-SS-AA-AB-0 | HCSB0253-SS-AA-AB-0 |
| | | Sample Date | 7/6/06 | 7/6/06 | 7/7/06 | 7/7/06 | 7/7/06 | 7/10/06 | 7/10/06 | 7/10/06 | 7/10/06 | 7/10/06 | 7/10/06 | 7/10/06 | 7/11/06 | 7/11/06 | 7/11/06 | 7/11/06 | 7/11/06 | 7/12/06 | 7/12/06 | 7/12/06 | 7/17/06 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 1.5-2 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 1380 | 7560 J | 13600 J | 14200 J | 3300 | 1410 | 1940 | 259 | 295 | 5620 J | 2260 | 1120 | 4780 J | 8970 J | 6270 | 6010 J | 1360 | 7390 | 5000 J | 405 | 7070 J |
| METALS | ANTIMONY | MG/KG | 1.2 UJ | 4.7 UJ | 4.7 J | 3.5 UJ | 1.3 UJ | 1.2 UJ | 1.5 UJ | 0.96 UJ | 0.93 UJ | 1.9 UJ | 1 UJ | 0.97 UJ | 2.4 J | 3.6 J | 2.9 J | 2.4 J | 1.4 J | 3.1 J | 1.8 UJ | 0.89 U | 4.3 J |
| METALS | ARSENIC | MG/KG | 2.1 J | 145 J | 520 J | 441 J | 4 | 12.5 | 69.5 | 0.93 U | 0.9 U | 37.8 J | 2.2 J | 1.5 J | 125 J | 251 J | 101 | 81.9 J | 6.3 | 340 J | 17 J | 1 J | 46.3 J |
| METALS | BARIUM | MG/KG | 8.9 J | 244 J | 3710 J | 2950 J | 59.2 J | 38.9 J | 287 | 4.7 J | 4.8 J | 360 J | 21.6 J | 9.4 J | 784 J | 1340 J | 606 | 670 J | 17.8 J | 1160 J | 173 J | 4.7 J | 490 J |
| METALS | BERYLLIUM | MG/KG | 0.03 J | 0.36 J | 1 J | 0.83 J | 0.41 J | 0.06 J | 0.09 J | 0.02 U | 0.04 J | 0.47 J | 0.24 J | 0.11 J | 0.3 J | 0.52 J | 0.42 J | 0.32 J | 0.03 U | 0.32 J | 0.22 J | 0.02 U | 0.37 J |
| METALS | CADMIUM | MG/KG | 0.06 U | 1.7 J | 5.5 J | 4.6 J | 0.79 J | 0.06 U | 1.1 J | 0.05 U | 0.05 U | 1.6 J | 1.9 | 0.09 J | 1.8 J | 2.1 J | 1.7 J | 2.1 J | 0.06 U | 0.51 J | 1.2 J | 0.06 J | 1.4 J |
| METALS | CALCIUM | MG/KG | 86.2 J | 13500 J | 6060 J | 7560 J | 362 J | 238 J | 1630 J | 33.6 J | 34.5 J | 3700 J | 2350 | 607 J | 1840 J | 4250 J | 1430 J | 3210 J | 229 J | 4210 J | 1940 J | 28.8 J | 3300 J |
| METALS | CHROMIUM | MG/KG | 6.8 | 351 J | 818 J | 791 J | 36.7 | 18.5 | 93.3 | 1.1 J | 1.2 J | 80.5 J | 7.4 | 3.6 | 211 J | 305 J | 164 | 152 J | 4.3 | 185 J | 32.6 J | 1.5 J | 66.3 J |
| METALS | COBALT | MG/KG | 0.24 U | 1.9 J | 19.2 J | 8.3 J | 0.73 J | 0.24 U | 2.6 J | 0.19 U | 0.19 U | 2.8 J | 1.6 J | 0.57 J | 4.5 J | 10.4 J | 6.3 J | 3.8 J | 0.34 J | 4.2 J | 1.8 J | 0.18 U | 4.4 J |
| METALS | COPPER | MG/KG | 3.6 J | 246 J | 138 J | 163 J | 16.4 | 3.5 J | 21.5 | 1.6 J | 2 J | 31.2 J | 9.5 | 2.1 J | 43 J | 65.8 J | 47.2 | 38.5 J | 5.7 J | 41.3 J | 19.7 J | 3.7 J | 54.4 J |
| METALS | CYANIDE | MG/KG | 0.06 U | 56.3 J | 79.5 J | 76.5 J | 2.4 | 1.3 | 2.9 | 0.04 U | 0.04 U | 9.5 J | 0.05 U | 0.05 U | 19 J | 25.6 J | 11.4 | 7.7 J | 0.06 U | 18.1 J | 2.5 J | 0.04 U | 6 J |
| METALS | IRON | MG/KG | 3010 | 13100 J | 63600 J | 30700 J | 4240 | 2420 | 6480 | 349 | 371 | 9710 J | 2940 | 2060 | 17500 J | 38700 J | 12900 | 17300 J | 7110 | 28500 J | 7900 J | 429 | 21000 J |
| METALS | LEAD | MG/KG | 31.1 | 3770 J | 5980 J | 6500 J | 200 | 103 | 721 | 16.3 | 19.3 | 750 J | 89.7 | 13.6 | 1720 J | 2320 J | 1240 | 1110 J | 57.9 | 1240 J | 203 J | 22.6 | 1400 J |
| METALS | MAGNESIUM | MG/KG | 212 J | 256 J | 970 J | 889 J | 277 J | 41.4 J | 189 J | 11.6 J | 15.5 J | 695 J | 635 J | 485 J | 365 J | 804 J | 464 J | 656 J | 103 J | 764 J | 570 J | 21.1 J | 578 J |
| METALS | MANGANESE | MG/KG | 5.2 | 74.3 J | 1150 J | 240 J | 9.4 | 7.2 | 51.1 | 5.2 | 5.6 | 144 J | 50.1 | 9.4 | 193 J | 1150 J | 130 | 225 J | 7.7 | 350 J | 50.2 J | 4.2 | 137 J |
| METALS | MERCURY | MG/KG | 0.08 U | 0.29 UJ | 0.21 UJ | 0.23 UJ | 0.08 U | 0.18 | 0.22 | 0.05 U | 0.06 U | 0.47 J | 0.22 | 0.05 U | 0.32 J | 0.78 J | 0.63 | 0.48 J | 0.12 J | 0.75 J | 0.26 J | 0.05 U | 0.29 J |
| METALS | NICKEL | MG/KG | 1.3 J | 7.4 J | 24.8 J | 16.6 J | 5.8 J | 0.7 J | 4.1 J | 0.38 J | 0.44 J | 9.3 J | 3.5 J | 1.9 J | 7.6 J | 13.8 J | 9.1 J | 8.7 J | 1.7 J | 8.9 J | 7.5 J | 0.58 J | 15.9 J |
| METALS | POTASSIUM | MG/KG | 373 J | 178 J | 386 J | 435 J | 183 J | 26.8 J | 113 J | 13.3 U | 16 J | 417 J | 145 J | 239 J | 208 J | 343 J | 260 J | 332 J | 76.4 J | 329 J | 289 J | 18.8 J | 290 J |
| METALS | SELENIUM | MG/KG | 1.5 U | 5.8 UJ | 4.1 J | 4.3 UJ | 1.6 UJ | 1.5 U | 1.9 U | 1.2 U | 1.1 U | 2.3 UJ | 1.3 U | 1.2 U | 2.1 UJ | 2.2 UJ | 1.8 U | 2.3 UJ | 1.5 U | 2.4 UJ | 2.7 J | 1.1 U | 2.9 UJ |
| METALS | SILVER | MG/KG | 0.33 U | 1.3 UJ | 0.89 UJ | 0.97 UJ | 0.36 U | 0.33 U | 0.43 U | 0.26 U | 0.25 U | 0.52 UJ | 0.28 U | 0.27 U | 0.47 UJ | 0.48 UJ | 0.4 U | 0.52 UJ | 0.34 U | 0.53 UJ | 0.49 UJ | 0.27 J | 0.65 UJ |
| METALS | SODIUM | MG/KG | 44.7 U | 174 UJ | 121 UJ | 131 UJ | 48 U | 44.2 U | 57.4 U | 35.5 U | 34.3 U | 69.7 UJ | 37.9 U | 35.9 U | 63.3 UJ | 65.2 UJ | 54 U | 76.3 J | 45.9 U | 71.8 UJ | 66.1 UJ | 38 J | 88.3 UJ |
| METALS | THALLIUM | MG/KG | 1.4 U | 5.3 UJ | 3.7 UJ | 4 UJ | 1.5 U | 1.3 U | 1.7 U | 1.1 U | 1 U | 2.1 UJ | 1.2 U | 1.1 U | 1.9 UJ | 2 UJ | 1.6 U | 2.1 UJ | 1.4 U | 2.2 UJ | 2 UJ | 1 U | 2.7 UJ |
| METALS | VANADIUM | MG/KG | 7.6 J | 17.1 J | 46.7 J | 42.9 J | 13.3 J | 5.8 J | 7.3 J | 2.6 J | 2.7 J | 22.4 J | 9.6 J | 4.5 J | 15.5 J | 32.3 J | 25.9 | 21 J | 13.5 J | 26.2 J | 16.9 J | 2.8 J | 23.3 J |
| METALS | ZINC | MG/KG | 10.4 J | 219 J | 1010 J | 782 J | 37.9 J | 8.3 | 170 | 2.5 J | 3.1 J | 201 J | 85.4 | 15.3 | 263 J | 425 J | 291 | 246 J | 10.3 | 195 J | 122 J | 3.8 J | 322 J |
| PEST/PCB | 4,4'-DDD | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDT | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1016 | MG/KG | 0.1 U | 0.39 UJ | 0.28 UJ | 0.31 UJ | 0.11 U | 0.1 U | 0.13 U | 0.08 U | 0.078 U | 0.16 UJ | 0.089 U | 0.083 U | | | | | | | | | |
| PEST/PCB | AROCLOR-1221 | MG/KG | 0.1 U | 0.39 UJ | 0.28 UJ | 0.31 UJ | 0.11 U | 0.1 U | 0.13 U | 0.08 U | 0.078 U | 0.16 UJ | 0.089 U | 0.083 U | | | | | | | | | |
| PEST/PCB | AROCLOR-1232 | MG/KG | 0.1 U | 0.39 UJ | 0.28 UJ | 0.31 UJ | 0.11 U | 0.1 U | 0.13 U | 0.08 U | 0.078 U | 0.16 UJ | 0.089 U | 0.083 U | | | | | | | | | |
| PEST/PCB | AROCLOR-1242 | MG/KG | 0.1 U | 0.39 UJ | 0.28 UJ | 0.31 UJ | 0.11 U | 0.1 U | 0.13 U | 0.08 U | 0.078 U | 0.16 UJ | 0.089 U | 0.083 U | | | | | | | | | |
| PEST/PCB | AROCLOR-1248 | MG/KG | 0.1 U | 0.39 UJ | 0.28 UJ | 0.31 UJ | 0.11 U | 0.1 U | 0.13 U | 0.08 U | 0.078 U | 0.16 UJ | 0.089 U | 0.083 U | | | | | | | | | |
| PEST/PCB | AROCLOR-1254 | MG/KG | 0.1 U | 0.39 UJ | 0.28 UJ | 0.31 UJ | 0.11 U | 0.1 U | 0.13 U | 0.08 U | 0.078 U | 0.16 UJ | 0.089 U | 0.083 U | | | | | | | | | |
| PEST/PCB | AROCLOR-1260 | MG/KG | 0.1 U | 0.39 UJ | 0.69 J | 0.31 UJ | 0.11 U | 0.1 U | 0.13 U | 0.08 U | 0.078 U | 0.16 UJ | 0.089 U | 0.083 U | | | | | | | | | |
| PEST/PCB | BETA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DELTA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DIELDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN I | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN II | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | METHOXYCHLOR | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | TOXAPHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 1,1'-BIPHENYL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | ACENAPHTHENE | MG/KG | 0.5 U | 1.9 UJ | 0.086 J | 0.2 J | 0.014 J | 0.49 U | 0.023 J | 0.4 U | 0.38 U | 0.031 J | 0.44 U | 0.41 U | 0.022 J | 0.032 J | 0.047 J | 1.6 UJ | 1 U | 0.03 J | 1.5 UJ | 0.38 U | 0.024 J |
| SVOC | ACENAPHTHYLENE | MG/KG | 0.5 U | 1.9 UJ | 0.059 J | 0.15 J | 0.56 U | 0.49 U | 0.64 U | 0.4 U | 0.38 U | 0.009 J | 0.44 U | 0.41 U | 1.4 UJ | 1.5 UJ | 0.014 J | 1.6 UJ | 1 U | 1.6 UJ | 1.5 UJ | 0.38 U | 0.036 J |
| SVOC | ACETOPHENONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | ANTHRACENE | MG/KG | 0.5 U | 1.9 UJ | 0.21 J | 0.47 J | 0.035 J | 0.019 J | 0.05 J | 0.4 U | 0.38 U | 0.054 J | 0.02 J | 0.006 J | 0.056 J | 0.052 J | 0.068 J | 0.029 J | 1 U | 0.077 J | 0.016 J | 0.38 U | 0.14 J |
| SVOC | ATRAZINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.019 J | 0.18 J | 1.4 J | 2.5 J | 0.12 J | 0.088 J | 0.25 J | 0.4 U | 0.38 U | 0.36 J | 0.09 J | 0.031 J | 0.42 J | 0.33 J | 0.52 J | 0.21 J | 1 UJ | 0.45 J | 0.12 J | 0.38 UJ | 0.98 J |
| SVOC | BENZO(A)PYRENE | MG/KG | 0.5 U | 0.22 J | 1.8 J | 2.8 J | 0.13 J | 0.12 J | 0.3 J | 0.4 U | 0.38 U | 0.44 J | 0.12 J | 0.034 J | 0.59 J | 0.53 J | 0.6 J | 0.36 J | 0.02 J | 0.52 J | 0.17 J | 0.38 UJ | 1.1 J |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 0.5 U | 0.22 J | 2 J | 2.6 J | 0.11 J | 0.11 J | 0.3 J | 0.4 U | 0.38 U | 0.46 J | 0.092 J | 0.025 J | 0.6 J | 0.54 J | 0.38 J | 0.6 J | 0.021 J | 0.48 J | 0.14 J | 0.38 UJ | 0.83 J |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCSB0235 | HCSB0236 | HCSB0237 | HCSB0238 | HCSB0239 | HCSB0240 | HCSB0241 | HCSB0242 | HCSB0242 | HCSB0243 | HCSB0244 | HCSB0244 | HCSB0245 | HCSB0246 | HCSB0247 | HCSB0248 | HCSB0249 | HCSB0250 | HCSB0251 | HCSB0252 | HCSB0253 |
| | | Field Sample ID | HCSB0235-SS-AA-AB-0 | HCSB0236-SS-AA-AB-0 | HCSB0237-SS-AA-AB-0 | HCSB0238-SS-AA-AB-0 | HCSB0239-SS-AA-AB-0 | HCSB0240-SS-AA-AB-0 | HCSB0241-SS-AA-AB-0 | HCSB0242-SS-AA-AB-0 | HCSB0242-SS-AA-AB-1 | HCSB0243-SS-AA-AB-0 | HCSB0244-SS-AA-AB-0 | HCSB0244-SS-AD-AE-0 | HCSB0245-SS-AA-AB-0 | HCSB0246-SS-AA-AB-0 | HCSB0247-SS-AA-AB-0 | HCSB0248-SS-AA-AB-0 | HCSB0249-SS-AA-AB-0 | HCSB0250-SS-AA-AB-0 | HCSB0251-SS-AA-AB-0 | HCSB0252-SS-AA-AB-0 | HCSB0253-SS-AA-AB-0 |
| | | Sample Date | 7/6/06 | 7/6/06 | 7/7/06 | 7/7/06 | 7/7/06 | 7/10/06 | 7/10/06 | 7/10/06 | 7/10/06 | 7/10/06 | 7/10/06 | 7/10/06 | 7/11/06 | 7/11/06 | 7/11/06 | 7/11/06 | 7/11/06 | 7/12/06 | 7/12/06 | 7/12/06 | 7/17/06 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 1.5-2 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.5 U | 0.23 J | 1.9 J | 2.3 J | 0.12 J | 0.16 J | 0.44 J | 0.4 U | 0.38 U | 0.48 J | 0.18 J | 0.04 J | 1.1 J | 0.67 J | 0.82 J | 0.62 J | 1 U | 0.85 J | 0.3 J | 0.38 UJ | 1 J |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.5 U | 0.26 J | 1.6 J | 2.5 J | 0.15 J | 0.12 J | 0.35 J | 0.4 U | 0.38 U | 0.42 J | 0.092 J | 0.032 J | 0.7 J | 0.55 J | 0.54 J | 0.36 J | 0.034 J | 0.55 J | 0.19 J | 0.38 UJ | 1.1 J |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | CAPROLACTAM | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | CARBAZOLE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | CHRYSENE | MG/KG | 0.024 J | 0.26 J | 2.2 J | 3.3 J | 0.17 J | 0.14 J | 0.42 J | 0.4 U | 0.38 U | 0.49 J | 0.13 J | 0.045 J | 0.74 J | 0.6 J | 0.75 J | 0.52 J | 1 UJ | 0.71 J | 0.22 J | 0.38 UJ | 1.2 J |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.5 U | 1.9 UJ | 0.54 J | 0.8 J | 0.033 J | 0.055 J | 0.64 U | 0.4 U | 0.38 U | 0.18 J | 0.057 J | 0.41 U | 0.32 J | 1.5 UJ | 0.31 J | 1.6 UJ | 1 U | 0.31 J | 0.073 J | 0.38 UJ | 0.35 J |
| SVOC | DIBENZOFURAN | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIMETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | FLUORANTHENE | MG/KG | 0.037 J | 0.42 J | 3 J | 5.2 J | 0.29 J | 0.23 J | 0.62 J | 0.4 U | 0.38 U | 0.79 J | 0.24 J | 0.072 J | 0.97 J | 0.84 J | 1 J | 0.62 J | 1 U | 0.87 J | 0.28 J | 0.015 J | 1.8 J |
| SVOC | FLUORENE | MG/KG | 0.5 U | 1.9 UJ | 0.11 J | 0.25 J | 0.013 J | 0.49 U | 0.026 J | 0.4 U | 0.38 U | 0.033 J | 0.44 U | 0.41 U | 1.4 UJ | 0.028 J | 0.049 J | 1.6 UJ | 1 U | 0.031 J | 1.5 UJ | 0.38 U | 0.031 J |
| SVOC | HEXACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.5 U | 0.24 J | 1.9 J | 2.4 J | 0.1 J | 0.14 J | 0.34 J | 0.4 U | 0.38 U | 0.39 J | 0.14 J | 0.03 J | 0.84 J | 0.53 J | 0.68 J | 0.46 J | 1 U | 0.64 J | 0.23 J | 0.38 UJ | 0.76 J |
| SVOC | ISOPHORONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | NAPHTHALENE | MG/KG | 0.5 U | 1.9 UJ | 0.044 J | 0.069 J | 0.56 U | 0.49 U | 0.64 U | 0.4 U | 0.38 U | 0.81 UJ | 0.44 U | 0.41 U | 1.4 UJ | 1.5 UJ | 1.2 U | 1.6 UJ | 1 U | 1.6 UJ | 1.5 UJ | 0.38 U | 0.98 UJ |
| SVOC | NITROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | PENTACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | PHENANTHRENE | MG/KG | 0.025 J | 0.14 J | 1.3 J | 2.2 J | 0.16 J | 0.1 J | 0.27 J | 0.4 U | 0.008 J | 0.41 J | 0.096 J | 0.045 J | 0.42 J | 0.36 J | 0.48 J | 0.25 J | 0.031 J | 0.42 J | 0.13 J | 0.38 U | 0.71 J |
| SVOC | PHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | PYRENE | MG/KG | 0.051 J | 0.35 J | 2.9 J | 5.2 J | 0.22 J | 0.18 J | 0.73 | 0.4 U | 0.38 U | 1 J | 0.18 J | 0.094 J | 1.2 J | 1.2 J | 1.2 J | 0.94 J | 1 UJ | 1.1 J | 0.36 J | 0.021 J | 2.3 J |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMOETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | ACETONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOFORM | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON DISULFIDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON TETRACHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROFORM | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | ETHYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | ISOPROPYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ACETATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ETHYL KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYLCYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | STYRENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TETRACHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | VINYL CHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | | | | | | | | | | | | | | | | | | | | | |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCSB0254 | HCSB0254 | HCSB0255 | HCSB0256 | HCSB0257 | HCSB0258 | HCSB0269 | HCSB0269 | HCSB0273 | HCSB0276 | HCSB0277 | HCSB0278 | HCSB0279 | HCSB0280 | HCSB0280 | HCSB0281 | HCSB0282 | HCSB0283 | HCSB0283 | HCSB0284 | HCSB0285 |
| | | Field Sample ID | HCSB0254-SS-AA-AB-0 | HCSB0254-SS-AA-AB-1 | HCSB0255-SS-AA-AB-0 | HCSB0256-SS-AA-AB-0 | HCSB0257-SS-AA-AB-0 | HCSB0258-SS-AA-AB-0 | HCSB0269-SS-AB-AC-0 | HCSB0269-SS-AA-AB-0 | HCSB0273-SS-AA-AB-0 | HCSB0276-SS-AA-AB-0 | HCSB0277-SS-AA-AB-0 | HCSB0278-SS-AA-AB-0 | HCSB0279-SS-AA-AB-0 | HCSB0280-SS-AA-AB-0 | HCSB0280-SS-AA-AB-1 | HCSB0281-SS-AA-AB-0 | HCSB0282-SS-AA-AB-0 | HCSB0283-SS-AA-AB-0 | HCSB0283-SS-AA-AB-1 | HCSB0284-SS-AA-AB-0 | HCSB0285-SS-AA-AB-0 |
| | | Sample Date | 7/17/06 | 7/17/06 | 7/13/06 | 7/13/06 | 7/17/06 | 7/17/06 | 7/25/06 | 7/25/06 | 7/26/06 | 7/27/06 | 7/31/06 | 7/31/06 | 7/31/06 | 7/31/06 | 7/31/06 | 8/1/06 | 8/1/06 | 8/1/06 | 8/1/06 | 8/1/06 | 8/1/06 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0.5-1 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 4000 J | 4990 J | 7990 J | 9430 J | 13600 J | 586 | 1030 | 4880 J | 1410 | 1940 | 11600 J | 11300 J | 10500 J | 9280 J | 9430 J | 3080 | 3730 | 11800 J | 10200 J | 9000 J | 4700 |
| METALS | ANTIMONY | MG/KG | 1.8 UJ | 4.1 J | 3.4 J | 4.2 J | 6.1 J | 0.98 U | 0.98 UJ | 2 UJ | 1.1 UJ | 1.2 J | 2.5 J | 2.7 J | 2.8 J | 2.8 J | 2.9 J | 0.86 UJ | 0.89 UJ | 411 J | 4 J | 2.1 J | 1.5 UJ |
| METALS | ARSENIC | MG/KG | 51.8 J | 70.5 J | 371 J | 453 J | 202 J | 1.7 J | 0.96 U | 12.9 J | 2.4 J | R | 303 J | 578 J | 1330 J | 813 J | 671 J | 7.4 | 4 | 522 J | 398 J | 379 J | 21.9 |
| METALS | BARIUM | MG/KG | 419 J | 542 J | 913 J | 1260 J | 960 J | 6 J | 12 J | 63.9 J | 7.9 J | 11.3 J | 585 J | 879 J | 803 J | 731 J | 719 J | 8.7 J | 8.8 J | 848 J | 1000 J | 890 J | 114 |
| METALS | BERYLLIUM | MG/KG | 0.3 J | 0.36 J | 0.5 J | 0.52 J | 0.86 J | 0.02 U | 0.06 J | 0.27 J | 0.08 J | 0.03 J | 0.71 J | 0.66 J | 0.65 J | 0.58 J | 0.6 J | 0.08 J | 0.05 J | 0.6 J | 0.55 J | 0.51 J | 0.27 J |
| METALS | CADMIUM | MG/KG | 2.4 J | 2.7 J | 2.6 J | 2.6 J | 3.2 J | 0.05 U | 0.05 U | 0.32 J | 0.06 U | 0.04 U | 3 J | 2.5 J | 3 J | 2.3 J | 2.1 J | 0.03 U | 0.03 U | 2.6 J | 3.3 J | 2.7 J | 0.57 J |
| METALS | CALCIUM | MG/KG | 2870 J | 3650 J | 3370 J | 4720 J | 5050 J | 83.8 J | 514 J | 3640 J | 155 J | 191 J | 3780 J | 2440 J | 3350 J | 4260 J | 5020 J | 74.8 J | 444 J | 7270 J | 3840 J | 3930 J | 2640 |
| METALS | CHROMIUM | MG/KG | 152 J | 192 J | 267 J | 322 J | 487 J | 1.5 J | 4.5 | 16.3 J | 6.7 | 5.8 J | 309 J | 365 J | 294 J | 279 J | 287 J | 13.6 | 11.4 | 493 J | 366 J | 342 J | 46.2 |
| METALS | COBALT | MG/KG | 2.7 J | 3.6 J | 12.2 J | 7.5 J | 8 J | 0.2 U | 0.2 U | 0.64 J | 0.22 U | 0.18 U | 9.5 J | 6.2 J | 11.6 J | 10.6 J | 10.9 J | 0.29 J | 0.46 J | 7.6 J | 10.1 J | 10.6 J | 0.96 J |
| METALS | COPPER | MG/KG | 39.4 J | 48.4 J | 60 J | 74.7 J | 100 J | 2.2 J | 1.8 J | 9.8 J | 4.3 J | R | 76.7 J | 125 J | 79.8 J | 68.9 J | 71.7 J | 5.5 | 3.7 | 438 J | 98.5 J | 87.5 J | 12.4 |
| METALS | CYANIDE | MG/KG | 6.1 J | 6 J | 24.3 J | 27.2 J | 45.4 J | 0.05 U | 0.05 U | 1.1 J | 0.05 U | 0.04 U | 2.1 UJ | 12.2 J | 12.1 J | 4.3 J | 7.9 J | 0.93 U | 1.1 U | 10.7 J | 7.1 J | 10 J | 1.7 U |
| METALS | IRON | MG/KG | 9160 J | 11700 J | 55400 J | 37300 J | 30000 J | 893 | 561 | 12300 J | 2370 | 3080 | 33000 J | 32800 J | 46000 J | 40700 J | 39000 J | 4780 | 5990 | 39400 J | 38500 J | 38300 J | 3160 |
| METALS | LEAD | MG/KG | 1410 J | 1760 J | 2600 J | 2750 J | 5600 J | 23.5 | 36 | 163 J | 47.2 | 26.9 | 2700 J | 4120 J | 2670 J | 2500 J | 2530 J | 33 | 12.3 | 4060 J | 3370 J | 3220 J | 526 |
| METALS | MAGNESIUM | MG/KG | 294 J | 378 J | 620 J | 662 J | 940 J | 20 J | 31.5 J | 240 J | 192 J | 132 J | 937 J | 874 J | 905 J | 869 J | 955 J | 161 J | 217 J | 1140 J | 880 J | 822 J | 150 J |
| METALS | MANGANESE | MG/KG | 62.9 J | 96.2 J | 935 J | 262 J | 242 J | 6 | 3.6 J | 25 J | 5.2 | 8.4 | 594 J | 271 J | 816 J | 708 J | 768 J | 5 | 9.6 | 416 J | 802 J | 992 J | 26.1 |
| METALS | MERCURY | MG/KG | 0.23 J | 0.36 J | 0.75 J | 1 J | 0.72 J | 0.06 U | 0.05 U | 0.23 J | 0.07 U | 0.06 J | 0.206 J | 0.559 J | 0.605 J | 0.531 J | 0.507 J | 0.044 J | 0.038 J | 0.572 J | 0.568 J | 0.534 J | 0.049 J |
| METALS | NICKEL | MG/KG | 6.8 J | 9.1 J | 12.9 J | 14.6 J | 17.4 J | 0.66 J | 0.65 J | 4.8 J | 1.2 J | 1.5 J | 15.1 J | 13.2 J | 14.5 J | 12.2 J | 12.8 J | 1.1 J | 1.6 J | 15.7 J | 15.6 J | 14.5 J | 2.8 J |
| METALS | POTASSIUM | MG/KG | 116 J | 177 J | 225 J | 311 J | 405 J | 23.4 J | 29.7 J | 156 J | 216 J | 93.5 J | 534 J | 536 J | 516 J | 450 J | 460 J | 334 J | 336 J | 478 J | 558 J | 464 J | 145 J |
| METALS | SELENIUM | MG/KG | 2.2 UJ | 2.7 UJ | 2 UJ | 3.2 UJ | 3.3 UJ | 1.2 UJ | 1.2 U | 2.4 UJ | 1.4 U | 1.3 | 2.8 J | 2.8 J | 3 J | 2.7 J | 2.8 J | 0.81 J | 0.67 J | 2.2 J | 2.2 J | 2.6 J | 1.1 U |
| METALS | SILVER | MG/KG | 0.5 UJ | 0.61 UJ | 0.45 UJ | 0.72 UJ | 0.74 UJ | 0.27 U | 0.27 U | 0.55 UJ | 0.31 U | 0.25 U | 0.21 J | 0.19 UJ | 0.18 J | 0.15 J | 0.16 UJ | 0.13 U | 0.13 U | 0.33 J | 0.23 J | 0.25 UJ | 0.14 U |
| METALS | SODIUM | MG/KG | 67.8 UJ | 82.3 UJ | 64.9 J | 96.6 UJ | 99.6 UJ | 36.4 U | 36.4 U | 73.6 UJ | 41.1 U | 33.2 U | 133 J | 147 J | 120 J | 133 J | 136 J | 25.1 U | 31.8 J | 143 J | 214 J | 155 J | 44.7 U |
| METALS | THALLIUM | MG/KG | 2.1 UJ | 2.5 UJ | 1.8 UJ | 2.9 UJ | 3 UJ | 1.1 U | 1.1 U | 2.2 UJ | 1.2 UJ | 1 U | 1 UJ | 1.3 UJ | 0.94 UJ | 0.98 UJ | 1.1 UJ | 0.61 U | 0.63 U | 1.2 UJ | 1.1 UJ | 1.2 UJ | 1.1 U |
| METALS | VANADIUM | MG/KG | 13.3 J | 16.2 J | 26.9 J | 33 J | 48 J | 4.2 J | 3.2 J | 19.3 J | 6.9 J | 10.2 J | 44.7 J | 38.9 J | 39.8 J | 36.1 J | 36.9 J | 9.7 | 14.4 | 36.6 J | 35 J | 30.3 J | 8.8 J |
| METALS | ZINC | MG/KG | 262 J | 339 J | 446 J | 444 J | 571 J | 3.4 J | 9.4 | 64.3 J | 9.3 | 12 | 388 J | 284 J | 393 J | 342 J | 347 J | 5.9 | 6.1 | 533 J | 501 J | 485 J | 18.7 |
| PEST/PCB | 4,4'-DDD | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDT | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1016 | MG/KG | | | | | | | | | | 0.077 U | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1221 | MG/KG | | | | | | | | | | 0.077 U | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1232 | MG/KG | | | | | | | | | | 0.077 U | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1242 | MG/KG | | | | | | | | | | 0.077 U | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1248 | MG/KG | | | | | | | | | | 0.077 U | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1254 | MG/KG | | | | | | | | | | 0.077 U | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1260 | MG/KG | | | | | | | | | | 0.077 U | | | | | | | | | | | |
| PEST/PCB | BETA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DELTA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DIELDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN I | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN II | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | METHOXYCHLOR | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | TOXAPHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 1,1'-BIPHENYL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | ACENAPHTHENE | MG/KG | 0.009 J | 0.92 UJ | 0.017 J | 0.026 J | 0.03 J | 0.42 U | 0.008 J | 0.014 J | 0.46 U | 0.38 U | 0.76 UJ | 0.88 UJ | 0.69 UJ | 0.071 J | 0.032 J | 0.35 UJ | 0.37 UJ | 0.7 UJ | 0.68 UJ | 0.038 J | 0.58 U |
| SVOC | ACENAPHTHYLENE | MG/KG | 0.78 UJ | 0.92 UJ | 0.009 J | 1.1 UJ | 1.1 UJ | 0.42 U | 0.42 U | 0.82 UJ | 0.46 U | 0.38 U | 0.76 UJ | 0.88 UJ | 0.69 UJ | 0.042 J | 0.02 J | 0.35 U | 0.37 U | 0.7 UJ | 0.68 UJ | 0.69 UJ | 0.58 U |
| SVOC | ACETOPHENONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | ANTHRACENE | MG/KG | 0.02 J | 0.022 J | 0.033 J | 0.059 J | 0.097 J | 0.42 U | 0.009 J | 0.025 J | 0.46 U | 0.013 J | 0.04 J | 0.04 J | 0.032 J | 0.11 J | 0.047 J | 0.35 U | 0.012 J | 0.036 J | 0.052 J | 0.075 J | 0.58 U |
| SVOC | ATRAZINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.13 J | 0.19 J | 0.22 J | 0.34 J | 0.5 J | 0.42 U | 0.033 J | 0.18 J | 0.46 U | 0.06 J | 0.25 J | 0.21 J | 0.22 J | 0.66 J | 0.33 J | 0.015 J | 0.37 U | 0.23 J | 0.36 J | 0.44 J | 0.58 U |
| SVOC | BENZO(A)PYRENE | MG/KG | 0.23 J | 0.26 J | 0.24 J | 0.43 J | 0.55 J | 0.42 U | 0.42 U | 0.26 J | 0.46 U | 0.078 J | 0.27 J | 0.21 J | 0.23 J | 0.67 J | 0.34 J | 0.01 J | 0.011 J | 0.32 J | 0.4 J | 0.52 J | 0.58 U |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 0.21 J | 0.37 J | 0.22 J | 0.49 J | 0.49 J | 0.42 U | 0.42 U | 0.28 J | 0.46 U | 0.1 J | 0.38 J | 0.36 J | 0.33 J | 0.89 J | 0.47 J | 0.017 J | 0.024 J | 0.59 J | 0.64 J | 0.98 J | 0.58 U |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCSB0254 | HCSB0254 | HCSB0255 | HCSB0256 | HCSB0257 | HCSB0258 | HCSB0269 | HCSB0269 | HCSB0273 | HCSB0276 | HCSB0277 | HCSB0278 | HCSB0279 | HCSB0280 | HCSB0280 | HCSB0281 | HCSB0282 | HCSB0283 | HCSB0283 | HCSB0284 | HCSB0285 |
| | | Field Sample ID | HCSB0254-SS-AA-AB-0 | HCSB0254-SS-AA-AB-1 | HCSB0255-SS-AA-AB-0 | HCSB0256-SS-AA-AB-0 | HCSB0257-SS-AA-AB-0 | HCSB0258-SS-AA-AB-0 | HCSB0269-SS-AB-AC-0 | HCSB0269-SS-AA-AB-0 | HCSB0273-SS-AA-AB-0 | HCSB0276-SS-AA-AB-0 | HCSB0277-SS-AA-AB-0 | HCSB0278-SS-AA-AB-0 | HCSB0279-SS-AA-AB-0 | HCSB0280-SS-AA-AB-0 | HCSB0280-SS-AA-AB-1 | HCSB0281-SS-AA-AB-0 | HCSB0282-SS-AA-AB-0 | HCSB0283-SS-AA-AB-0 | HCSB0283-SS-AA-AB-1 | HCSB0284-SS-AA-AB-0 | HCSB0285-SS-AA-AB-0 |
| | | Sample Date | 7/17/06 | 7/17/06 | 7/13/06 | 7/13/06 | 7/17/06 | 7/17/06 | 7/25/06 | 7/25/06 | 7/26/06 | 7/27/06 | 7/31/06 | 7/31/06 | 7/31/06 | 7/31/06 | 7/31/06 | 8/1/06 | 8/1/06 | 8/1/06 | 8/1/06 | 8/1/06 | 8/1/06 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0.5-1 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.22 J | 0.31 J | 0.27 J | 0.61 J | 0.83 J | 0.42 U | 0.42 U | 0.26 J | 0.46 U | 0.38 U | 0.054 J | 0.043 J | 0.061 J | 0.14 J | 0.083 J | 0.35 U | 0.37 U | 0.052 J | 0.086 J | 0.11 J | 0.58 U |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.26 J | 0.29 J | 0.29 J | 0.33 J | 0.56 J | 0.42 U | 0.42 U | 0.27 J | 0.46 U | 0.12 J | 0.15 J | 0.4 J | 0.12 J | 0.35 J | 0.16 J | 0.35 U | 0.026 J | 0.64 J | 0.16 J | 1 J | 0.58 U |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | CAPROLACTAM | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | CARBAZOLE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | CHRYSENE | MG/KG | 0.27 J | 0.31 J | 0.31 J | 0.5 J | 0.65 J | 0.42 U | 0.037 J | 0.23 J | 0.46 U | 0.1 J | 0.29 J | 0.23 J | 0.26 J | 0.77 J | 0.4 J | 0.012 J | 0.014 J | 0.29 J | 0.44 J | 0.59 J | 0.58 U |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.78 UJ | 0.92 UJ | 0.11 J | 0.22 J | 1.1 UJ | 0.42 U | 0.42 U | 0.82 UJ | 0.46 U | 0.38 U | 0.048 J | 0.039 J | 0.047 J | 0.13 J | 0.059 J | 0.35 U | 0.37 U | 0.048 J | 0.069 J | 0.1 J | 0.58 U |
| SVOC | DIBENZOFURAN | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIMETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | FLUORANTHENE | MG/KG | 0.36 J | 0.55 J | 0.48 J | 0.78 J | 1.3 J | 0.023 J | 0.082 J | 0.39 J | 0.025 J | 0.15 J | 0.55 J | 0.46 J | 0.49 J | 1.4 J | 0.7 J | 0.066 J | 0.025 J | 0.47 J | 0.8 J | 0.99 J | 0.58 U |
| SVOC | FLUORENE | MG/KG | 0.78 UJ | 0.92 UJ | 0.016 J | 0.028 J | 0.037 J | 0.42 U | 0.42 U | 0.82 UJ | 0.46 U | 0.38 U | 0.76 UJ | 0.88 UJ | 0.69 UJ | 0.057 J | 0.029 J | 0.35 U | 0.37 U | 0.7 UJ | 0.024 J | 0.04 J | 0.58 U |
| SVOC | HEXACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.19 J | 0.25 J | 0.24 J | 0.48 J | 0.64 J | 0.42 U | 0.42 U | 0.23 J | 0.46 U | 0.38 U | 0.16 J | 0.12 J | 0.15 J | 0.4 J | 0.21 J | 0.35 U | 0.37 U | 0.15 J | 0.23 J | 0.35 J | 0.58 U |
| SVOC | ISOPHORONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | NAPHTHALENE | MG/KG | 0.78 UJ | 0.92 UJ | 0.67 UJ | 1.1 UJ | 1.1 UJ | 0.42 U | 0.42 U | 0.82 UJ | 0.46 U | 0.38 U | 0.76 UJ | 0.88 UJ | 0.69 UJ | 0.66 UJ | 0.69 UJ | 0.35 U | 0.37 U | 0.7 UJ | 0.68 UJ | 0.69 UJ | 0.58 U |
| SVOC | NITROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | PENTACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | PHENANTHRENE | MG/KG | 0.15 J | 0.18 J | 0.23 J | 0.33 J | 0.45 J | 0.013 J | 0.052 J | 0.16 J | 0.012 J | 0.044 J | 0.25 J | 0.26 J | 0.22 J | 0.73 J | 0.32 J | 0.014 J | 0.012 J | 0.19 J | 0.3 J | 0.43 J | 0.58 U |
| SVOC | PHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | PYRENE | MG/KG | 0.43 J | 0.35 J | 0.47 J | 0.72 J | 0.73 J | 0.034 J | 0.067 J | 0.37 J | 0.022 J | 0.15 J | 0.47 J | 0.42 J | 0.43 J | 1.2 J | 0.61 J | 0.018 J | 0.015 J | 0.36 J | 0.55 J | 0.78 J | 0.58 U |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMOETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | ACETONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOFORM | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON DISULFIDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON TETRACHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROFORM | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | ETHYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | ISOPROPYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ACETATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ETHYL KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYLCYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | STYRENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TETRACHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | VINYL CHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | | | | | | | | | | | | | | | | | | | | | |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCSB0286 | HCSB0287 | HCSB0288 | HCSB0289 | HCSB0314 | HCSB0314 | HCSB0315 | HCSB0316 | HCSB0317 | HCSB0318 | HCSB0319 | HCSB0320 | HCSB0321 | HCSB0326 | HCSB0326 | HCSB0327 | HCSB0328 | HCSB0329 | HCSB0329 | HCSB0330 | HCSB0331 |
| | | Field Sample ID | HCSB0286-SS-AA-AB-0 | HCSB0287-SS-AA-AB-0 | HCSB0288-SS-AA-AB-0 | HCSB0289-SS-AA-AB-0 | HCSB0314-SS-AA-AB-0 | HCSB0314-SS-AA-AB-1 | HCSB0315-SS-AA-AB-0 | HCSB0316-SS-AA-AB-0 | HCSB0317-SS-AA-AB-0 | HCSB0318-SS-AA-AB-0 | HCSB0319-SS-AA-AB-0 | HCSB0320-SS-AA-AB-0 | HCSB0321-SS-AA-AB-0 | HCSB0326-SS-AA-AB-0 | HCSB0326-SS-AA-AB-1 | HCSB0327-SS-AA-AB-0 | HCSB0328-SS-AA-AB-0 | HCSB0329-SS-AA-AB-0 | HCSB0329-SS-AA-AB-1 | HCSB0330-SS-AA-AB-0 | HCSB0331-SS-AA-AB-0 |
| | | Sample Date | 8/2/06 | 8/2/06 | 8/2/06 | 8/2/06 | 8/21/06 | 8/21/06 | 8/21/06 | 8/21/06 | 8/21/06 | 8/21/06 | 8/21/06 | 8/21/06 | 8/21/06 | 8/22/06 | 8/22/06 | 8/22/06 | 8/23/06 | 8/23/06 | 8/23/06 | 8/23/06 | 8/23/06 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 10500 J | 8060 | 10500 | 11800 | 10900 J | 11700 J | 14300 J | 14600 J | 15100 J | 15300 J | 17600 J | 14000 J | 12200 J | 1310 J | 1490 J | 1720 J | 12500 J | 10400 J | 8910 J | 10900 J | 15900 J |
| METALS | ANTIMONY | MG/KG | 3.6 J | 2.4 J | 1.8 J | 0.8 J | 2.7 UJ | 2.6 UJ | 5.8 J | 2.4 UJ | 2.3 UJ | 4.3 J | 6.3 J | 8.2 J | 5.5 UJ | 0.78 J | 1.3 J | 0.41 UJ | 4.5 J | 2.1 J | 1.7 J | 1.4 J | 2.5 J |
| METALS | ARSENIC | MG/KG | 2660 J | 479 | 303 | 239 | 128 J | 152 J | 592 J | 258 J | 256 J | 234 J | 831 J | 710 J | 599 J | 2.3 J | R | R | 1210 J | 144 J | 116 J | 399 J | 352 J |
| METALS | BARIUM | MG/KG | 1090 J | 1380 | 462 | 177 | 385 J | 438 J | 908 J | 830 J | 1050 J | 1080 J | 2040 J | 1510 J | 1130 J | 9.5 J | 10.5 J | 4.2 J | 1330 J | 865 J | 695 J | 822 J | 1220 J |
| METALS | BERYLLIUM | MG/KG | 0.66 J | 0.44 J | 0.57 J | 0.6 J | 0.67 J | 0.76 J | 0.99 J | 0.91 J | 0.99 J | 0.98 J | 1.1 J | 0.92 J | 0.8 J | 0.05 J | 0.07 J | 0.02 J | 0.73 J | 0.56 J | 0.46 J | 0.72 J | 0.81 J |
| METALS | CADMIUM | MG/KG | 2.9 J | 1.3 J | 2.3 | 2.1 J | 2.8 J | 3.2 J | 6.5 J | 3.3 J | 5.7 J | 2.5 J | 6.4 J | 4.8 J | 5.1 J | 0.02 U | 0.02 U | 0.03 J | 2.7 J | 0.99 J | 1.9 J | 3.5 J | 2.4 J |
| METALS | CALCIUM | MG/KG | 3900 J | 2320 | 2660 | 3460 | 2830 J | 3250 J | 4430 J | 3290 J | 3020 J | 3240 J | 6220 J | 6400 J | 5800 J | 305 J | 257 J | 169 J | 4520 J | 2470 J | 2110 J | 2940 J | 3900 J |
| METALS | CHROMIUM | MG/KG | 393 J | 650 | 217 | 70 | 186 J | 219 J | 494 J | 355 J | 264 J | 585 J | 1360 J | 392 J | 348 J | 8.3 | 9.5 | 3.3 | 298 J | 329 J | 290 J | 442 J | 331 J |
| METALS | COBALT | MG/KG | 6.9 J | 3.7 J | 8.8 J | 8.5 J | 3.6 J | 3.9 J | 11.4 J | 7.2 J | 7 J | 5.8 J | 8.1 J | 8.3 J | 9.6 J | 0.23 J | 0.25 J | 0.08 U | 7.4 J | 2.7 J | 2.3 J | 11 J | 8 J |
| METALS | COPPER | MG/KG | 151 J | 118 | 58.3 | 34.7 | 91.3 J | 112 J | 159 J | 165 J | 165 J | 172 J | 718 J | 306 J | 253 J | 4.6 | 5.7 | 3.2 | 222 J | 179 J | 162 J | 124 J | 200 J |
| METALS | CYANIDE | MG/KG | 4.4 J | 20.3 | 7.4 | 1.9 U | 3 UJ | 2.9 UJ | 13.3 J | 3 UJ | 3.7 J | 9.9 J | 6 UJ | 7.9 UJ | 9.2 J | 1.2 U | 1.4 U | 0.95 U | 3.7 UJ | 2 UJ | 1.8 UJ | 12.4 J | 2.9 J |
| METALS | IRON | MG/KG | 55300 J | 24700 | 33600 | 33700 | 15400 J | 16700 J | 54900 J | 32000 J | 35200 J | 25800 J | 28200 J | 51700 J | 45600 J | 3070 | 3530 | 2090 | 55100 J | 16200 J | 14100 J | 43800 J | 38300 J |
| METALS | LEAD | MG/KG | 4010 J | 5750 | 2000 | 549 | 2960 J | 3360 J | 4670 J | 3360 J | 3180 J | 4780 J | 16600 J | 5120 J | 4320 J | 95.4 | 107 | 23.2 | 3320 J | 3340 J | 3250 J | 4010 J | 3600 J |
| METALS | MAGNESIUM | MG/KG | 872 J | 572 J | 941 | 1160 | 852 J | 913 J | 1040 J | 1070 J | 1020 J | 1060 J | 1020 J | 1190 J | 1110 J | 290 J | 336 J | 48.4 J | 1030 J | 753 J | 657 J | 776 J | 1210 J |
| METALS | MANGANESE | MG/KG | 496 J | 238 | 544 | 531 | 62.5 J | 69.9 J | 526 J | 235 J | 156 J | 117 J | 139 J | 265 J | 368 J | 8.2 | 8 | 7.4 | 320 J | 92.7 J | 78.8 J | 689 J | 442 J |
| METALS | MERCURY | MG/KG | 0.553 J | 0.504 J | 0.384 J | 0.298 J | 0.551 J | 0.435 J | 0.726 J | 0.8 J | 1 J | 0.977 J | 1 J | 0.997 J | 0.769 J | 0.072 | 0.072 | 0.035 | 1.4 J | 0.855 J | 1.1 J | 0.606 J | 1.2 J |
| METALS | NICKEL | MG/KG | 14.1 J | 8.7 | 12.3 | 11.1 | 12.4 J | 13.1 J | 21 J | 16.2 J | 16.3 J | 15.3 J | 27.2 J | 18.4 J | 19.1 J | 1.3 J | 1.5 J | 0.73 J | 17.7 J | 9 J | 7.8 J | 17.1 J | 16.1 J |
| METALS | POTASSIUM | MG/KG | 541 J | 463 J | 624 J | 911 J | 779 J | 783 J | 795 J | 776 J | 711 J | 704 J | 751 J | 701 J | 686 J | 465 J | 566 J | 62.8 J | 546 J | 457 J | 392 J | 469 J | 770 J |
| METALS | SELENIUM | MG/KG | 2.1 J | 1.6 J | 1.5 J | 1.7 J | 2.3 J | 2.8 J | 3.2 UJ | 3.2 J | 2.5 J | 2.8 J | 3.8 UJ | 4.9 UJ | 4.2 J | 0.44 U | 0.45 UJ | 0.38 U | 3.9 J | 1.5 J | 1.4 J | 3.1 J | 3 J |
| METALS | SILVER | MG/KG | 0.15 UJ | 0.12 U | 0.13 U | 0.15 U | 0.4 UJ | 0.38 UJ | 0.64 UJ | 0.36 UJ | 0.33 UJ | 0.44 UJ | 1 J | 1.3 J | 0.84 J | 0.09 U | 0.09 U | 0.08 U | 1.4 J | 0.65 J | 0.57 J | 0.19 UJ | 0.79 J |
| METALS | SODIUM | MG/KG | 115 J | 152 J | 177 J | 184 J | 80.5 J | 110 J | 325 J | 203 J | 185 J | 232 J | 257 J | 461 J | 279 J | 23.6 U | 24.3 U | 20.6 U | 211 J | 102 J | 82.3 J | 157 J | 181 J |
| METALS | THALLIUM | MG/KG | 1.4 J | 0.84 U | 0.9 U | 0.98 U | 1.9 UJ | 1.9 UJ | 3.1 UJ | 1.7 UJ | 1.6 UJ | 2.1 UJ | 3.6 UJ | 4.6 UJ | 3.9 UJ | 0.59 U | 0.61 U | 0.52 U | 1.8 UJ | 1.1 UJ | 1 UJ | 1.3 UJ | 1.4 UJ |
| METALS | VANADIUM | MG/KG | 37.2 J | 23.3 | 35.2 | 34 | 28.1 J | 30.8 J | 40.7 J | 38.3 J | 43.8 J | 43.3 J | 44.3 J | 39.5 J | 35.7 J | 7.9 | 9.7 | 6.8 | 48.8 J | 31.5 J | 27.3 J | 32.9 J | 53.8 J |
| METALS | ZINC | MG/KG | 385 J | 262 | 282 | 180 | 230 J | 281 J | 649 J | 374 J | 547 J | 293 J | 577 J | 615 J | 573 J | 15.3 J | 17.6 J | 5.3 J | 396 J | 176 J | 165 J | 500 J | 340 J |
| PEST/PCB | 4,4'-DDD | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDT | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1016 | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1221 | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1232 | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1242 | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1248 | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1254 | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1260 | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | BETA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DELTA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DIELDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN I | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN II | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | METHOXYCHLOR | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | TOXAPHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 1,1'-BIPHENYL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | ACENAPHTHENE | MG/KG | 0.66 UJ | 0.58 U | 0.03 J | 0.65 U | 1 UJ | 1.1 UJ | 1.8 UJ | 0.047 J | 0.062 J | 1.3 UJ | 2 UJ | 2.6 UJ | 2.3 UJ | 0.42 UJ | 0.46 U | 0.35 U | 0.09 J | 0.039 J | 0.031 J | 0.059 J | 0.11 J |
| SVOC | ACENAPHTHYLENE | MG/KG | 0.66 UJ | 0.031 J | 0.033 J | 0.65 U | 1 UJ | 0.058 J | 0.044 J | 0.089 J | 0.1 J | 1.3 UJ | 2 UJ | 2.6 UJ | 2.3 UJ | 0.42 UJ | 0.46 U | 0.35 U | 0.12 J | 0.046 J | 0.69 UJ | 0.066 J | 0.2 J |
| SVOC | ACETOPHENONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | ANTHRACENE | MG/KG | 0.03 J | 0.047 J | 0.077 J | 0.65 U | 0.043 J | 0.06 J | 0.083 J | 0.14 J | 0.14 J | 0.054 J | 2 UJ | 0.11 J | 0.061 J | 0.42 UJ | 0.46 U | 0.35 U | 0.17 J | 0.076 J | 0.055 J | 0.14 J | 0.26 J |
| SVOC | ATRAZINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.2 J | 0.32 J | 0.43 J | 0.052 J | 0.26 J | 0.3 J | 0.58 J | 0.81 J | 0.79 J | 0.28 J | 0.12 J | 0.59 J | 0.34 J | 0.027 J | 0.035 J | 0.025 J | 0.95 J | 0.49 J | 0.4 J | 0.82 J | 1.3 J |
| SVOC | BENZO(A)PYRENE | MG/KG | 0.21 J | 0.34 J | 0.42 J | 0.069 J | 0.29 J | 0.37 J | 0.74 J | 0.97 J | 0.92 J | 0.36 J | 0.15 J | 0.73 J | 0.42 J | 0.022 J | 0.031 J | 0.024 J | 1.2 J | 0.54 J | 0.42 J | 0.86 J | 1.4 J |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 0.3 J | 0.53 J | 0.64 | 0.13 J | 0.6 J | 0.76 J | 1.4 J | 2.5 J | 2.4 J | 0.71 J | 0.29 J | 1.6 J | 1 J | 0.034 J | 0.057 J | 0.067 J | 2 J | 0.94 J | 0.64 J | 1.7 J | 2.5 J |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCSB0286 | HCSB0287 | HCSB0288 | HCSB0289 | HCSB0314 | HCSB0314 | HCSB0315 | HCSB0316 | HCSB0317 | HCSB0318 | HCSB0319 | HCSB0320 | HCSB0321 | HCSB0326 | HCSB0326 | HCSB0327 | HCSB0328 | HCSB0329 | HCSB0329 | HCSB0330 | HCSB0331 |
| | | Field Sample ID | HCSB0286-SS-AA-AB-0 | HCSB0287-SS-AA-AB-0 | HCSB0288-SS-AA-AB-0 | HCSB0289-SS-AA-AB-0 | HCSB0314-SS-AA-AB-0 | HCSB0314-SS-AA-AB-1 | HCSB0315-SS-AA-AB-0 | HCSB0316-SS-AA-AB-0 | HCSB0317-SS-AA-AB-0 | HCSB0318-SS-AA-AB-0 | HCSB0319-SS-AA-AB-0 | HCSB0320-SS-AA-AB-0 | HCSB0321-SS-AA-AB-0 | HCSB0326-SS-AA-AB-0 | HCSB0326-SS-AA-AB-1 | HCSB0327-SS-AA-AB-0 | HCSB0328-SS-AA-AB-0 | HCSB0329-SS-AA-AB-0 | HCSB0329-SS-AA-AB-1 | HCSB0330-SS-AA-AB-0 | HCSB0331-SS-AA-AB-0 |
| | | Sample Date | 8/2/06 | 8/2/06 | 8/2/06 | 8/2/06 | 8/21/06 | 8/21/06 | 8/21/06 | 8/21/06 | 8/21/06 | 8/21/06 | 8/21/06 | 8/21/06 | 8/21/06 | 8/22/06 | 8/22/06 | 8/22/06 | 8/23/06 | 8/23/06 | 8/23/06 | 8/23/06 | 8/23/06 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.044 J | 0.068 J | 0.065 J | 0.65 U | 0.049 J | 0.076 J | 0.12 J | 0.11 J | 0.1 J | 0.042 J | 2 UJ | 0.09 J | 2.3 UJ | 0.42 UJ | 0.46 U | 0.35 U | 0.19 J | 0.077 J | 0.073 J | 0.096 J | 0.14 J |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.089 J | 0.16 J | 0.19 J | 0.029 J | 0.15 J | 0.21 J | 0.46 J | 2.7 J | 2.6 J | 0.26 J | 0.092 J | 0.48 J | 0.23 J | 0.015 J | 0.023 J | 0.076 J | 0.63 J | 0.27 J | 0.24 J | 0.35 J | 0.87 J |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | CAPROLACTAM | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | CARBAZOLE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | CHRYSENE | MG/KG | 0.23 J | 0.37 J | 0.48 J | 0.079 J | 0.36 J | 0.43 J | 0.85 J | 1.1 J | 1 J | 0.41 J | 0.19 J | 0.87 J | 0.51 J | 0.028 J | 0.044 J | 0.037 J | 1.4 J | 0.68 J | 0.5 J | 1.1 J | 1.9 J |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.038 J | 0.064 J | 0.073 J | 0.65 U | 0.049 J | 0.1 J | 0.1 J | 0.15 J | 0.15 J | 0.072 J | 2 UJ | 0.16 J | 0.083 J | 0.42 UJ | 0.46 U | 0.35 U | 0.26 J | 0.12 J | 0.096 J | 0.17 J | 0.27 J |
| SVOC | DIBENZOFURAN | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIMETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | FLUORANTHENE | MG/KG | 0.44 J | 0.6 | 0.84 | 0.12 J | 0.57 J | 0.52 J | 1.3 J | 2 J | 1.9 J | 0.76 J | 0.31 J | 1.5 J | 0.89 J | 0.046 J | 0.07 J | 0.06 J | 2.3 J | 1.1 J | 0.81 J | 1.9 J | 3.2 J |
| SVOC | FLUORENE | MG/KG | 0.66 UJ | 0.58 U | 0.58 U | 0.65 U | 1 UJ | 1.1 UJ | 1.8 UJ | 0.064 J | 0.079 J | 1.3 UJ | 2 UJ | 2.6 UJ | 2.3 UJ | 0.42 UJ | 0.46 U | 0.35 U | 1.2 UJ | 0.71 UJ | 0.03 J | 0.058 J | 0.12 J |
| SVOC | HEXACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.11 J | 0.21 J | 0.23 J | 0.054 J | 0.18 J | 0.25 J | 0.38 J | 0.47 J | 0.44 J | 0.18 J | 0.085 J | 0.39 J | 0.25 J | 0.016 J | 0.022 J | 0.017 J | 0.82 J | 0.38 J | 0.31 J | 0.54 J | 0.83 J |
| SVOC | ISOPHORONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | NAPHTHALENE | MG/KG | 0.66 UJ | 0.58 U | 0.58 U | 0.65 U | 1 UJ | 1.1 UJ | 1.8 UJ | 1.1 UJ | 1 UJ | 1.3 UJ | 2 UJ | 2.6 UJ | 2.3 UJ | 0.42 UJ | 0.46 U | 0.35 U | 0.034 J | 0.71 UJ | 0.69 UJ | 0.96 UJ | 0.036 J |
| SVOC | NITROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | PENTACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | PHENANTHRENE | MG/KG | 0.19 J | 0.26 J | 0.46 J | 0.048 J | 0.21 J | 0.17 J | 0.47 J | 0.66 J | 0.62 J | 0.27 J | 0.11 J | 0.47 J | 0.29 J | 0.025 J | 0.039 J | 0.029 J | 1.1 J | 0.48 J | 0.35 J | 0.73 J | 1.4 J |
| SVOC | PHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | PYRENE | MG/KG | 0.34 J | 0.58 | 0.81 | 0.11 J | 0.37 J | 0.36 J | 0.85 J | 1.2 J | 1.2 J | 0.44 J | 0.18 J | 0.86 J | 0.52 J | 0.42 UJ | 0.46 UJ | 0.35 UJ | 1.9 J | 0.91 J | 0.73 J | 1.3 J | 2.4 J |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMOETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | ACETONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOFORM | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON DISULFIDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON TETRACHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROFORM | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | ETHYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | ISOPROPYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ACETATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ETHYL KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYLCYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | STYRENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TETRACHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | VINYL CHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | | | | | | | | | | | | | | | | | | | | | |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCSB0332 | HCSB0333 | HCSB0334 | HCSB0335 | HCSB0335 | HCSB0336 | HCSB0337 | HCSB0338 | HCSB0339 | HCSB0340 | HCSB0340 | HCSB0341 | HCSB0342 | HCSB0343 | HCSB0344 | HCSB0345 | HCSB0346 | HCSB0347 | HCSB0347 | HCSB0366 | HCSB0366 |
| | | Field Sample ID | HCSB0332-SS-AA-AB-0 | HCSB0333-SS-AA-AB-0 | HCSB0334-SS-AA-AB-0 | HCSB0335-SS-AA-AB-0 | HCSB0335-SS-AA-AB-1 | HCSB0336-SS-AA-AB-0 | HCSB0337-SS-AA-AB-0 | HCSB0338-SS-AA-AB-0 | HCSB0339-SS-AA-AB-0 | HCSB0340-SS-AA-AB-0 | HCSB0340-SS-AA-AB-1 | HCSB0341-SS-AA-AB-0 | HCSB0342-SS-AA-AB-0 | HCSB0343-SS-AA-AB-0 | HCSB0344-SS-AA-AB-0 | HCSB0345-SS-AA-AB-0 | HCSB0346-SS-AA-AB-0 | HCSB0347-SS-AA-AB-0 | HCSB0347-SS-AA-AB-1 | HCSB0366-SS-AA-AB-0 | HCSB0366-SS-AA-AB-1 |
| | | Sample Date | 8/23/06 | 8/23/06 | 8/23/06 | 8/24/06 | 8/24/06 | 8/24/06 | 8/24/06 | 8/24/06 | 8/24/06 | 8/28/06 | 8/28/06 | 8/28/06 | 8/28/06 | 8/28/06 | 8/28/06 | 8/28/06 | 8/28/06 | 9/12/06 | 9/12/06 | 9/19/06 | 9/19/06 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 1640 J | 13000 J | 1120 J | 13600 J | 17800 J | 15500 J | 11700 J | 16200 J | 5430 J | 2960 | 2710 | 3470 | 5970 | 3830 | 7060 J | 2920 | 1890 | 783 J | 751 J | 5240 J | 5450 J |
| METALS | ANTIMONY | MG/KG | 0.67 J | 1.7 J | 0.41 UJ | 3.1 J | 2.8 J | 2.5 UJ | 4.4 J | 3.5 UJ | 1.8 UJ | 0.51 UJ | 0.74 J | 0.52 UJ | 1.9 J | 2.5 J | 5.4 J | 1.9 J | 1.2 J | 0.88 U | 0.93 U | 3 J | 1.8 J |
| METALS | ARSENIC | MG/KG | 8.2 | 281 J | 1.4 | 357 J | 330 J | 299 J | 220 J | 250 J | 28.3 J | 4.5 J | 3.1 J | 3 J | 42.4 J | 7.1 J | 17.4 J | 8.9 J | 3.6 J | 1.4 | 1.3 | 231 J | 204 J |
| METALS | BARIUM | MG/KG | 36.6 J | 811 J | 8.6 J | 503 J | 595 J | 654 J | 292 J | 306 J | 114 J | 8.9 J | 9 J | 8.1 J | 111 | 249 | 958 J | 32.6 J | 12.4 J | 10.2 J | 10.5 J | 843 | 1000 |
| METALS | BERYLLIUM | MG/KG | 0.06 J | 0.71 J | 0.06 J | 0.71 J | 0.85 J | 0.78 J | 0.5 J | 0.72 J | 0.21 J | 0.16 J | 0.2 J | 0.13 J | 0.24 J | 0.25 J | 0.83 J | 0.11 J | 0.07 J | 0.06 J | 0.08 J | 0.36 J | 0.32 J |
| METALS | CADMIUM | MG/KG | 0.43 J | 2.1 J | 0.05 J | 2.9 J | 3 J | 3.7 J | 4 J | 4.3 J | 1.3 J | 0.66 | 0.04 J | 0.04 J | 0.71 J | 2.4 | 13.9 J | 0.19 J | 0.1 J | 0.03 U | 0.05 J | 1.5 J | 1.3 |
| METALS | CALCIUM | MG/KG | 1340 | 2670 J | 488 J | 4190 J | 4410 J | 3350 J | 3400 J | 3380 J | 1940 J | 135 J | 120 J | 225 J | 1370 | 2280 | 15900 J | 720 J | 142 J | 28.2 J | 28.1 J | 1680 | 1530 |
| METALS | CHROMIUM | MG/KG | 7.3 | 306 J | 4.8 | 217 J | 274 J | 322 J | 258 J | 149 J | 31.7 J | 10.7 J | 10 J | 10.2 J | 170 J | 26 J | 217 J | 8.3 J | 9.2 J | 2.7 J | 2.5 J | 368 | 452 |
| METALS | COBALT | MG/KG | 0.91 J | 3.8 J | 0.26 J | 6.9 J | 7.8 J | 9.7 J | 7.5 J | 15.5 J | 1.7 J | 0.34 J | 0.26 J | 0.24 J | 1.2 J | 1.1 J | 6.2 J | 0.51 J | 0.31 J | 0.11 J | 0.07 U | 4.9 J | 3.7 J |
| METALS | COPPER | MG/KG | 15.6 J | 283 J | 3.2 | 158 J | 197 J | 201 J | 139 J | 79.1 J | 24.5 J | 1.8 J | 1.5 J | 4.3 | 92.6 | 301 | 1700 J | 9.2 | 6 | 10.7 | 10.7 | 66 | 74.6 |
| METALS | CYANIDE | MG/KG | 1.4 U | 3 UJ | 0.98 U | 2.6 UJ | 2.4 UJ | 2.9 UJ | 3.7 UJ | 4.1 UJ | 2 UJ | 1.2 U | 1.4 U | 1.5 U | 1.7 U | 1 U | 3.8 UJ | 1.9 U | 1 U | 0.99 U | 1 U | 33.8 J | 25 J |
| METALS | IRON | MG/KG | 6790 | 17600 J | 2650 J | 25800 J | 30000 J | 35000 J | 27500 J | 44900 J | 6470 J | 5660 | 4920 | 4430 | 8830 | 10600 | 26000 J | 5070 | 3750 | 930 | 923 | 18000 | 15400 |
| METALS | LEAD | MG/KG | 85.8 J | 9250 J | 23 J | 4740 J | 5210 J | 4850 J | 3170 J | 1530 J | 352 J | 32.4 | 28 | 59.7 | 1830 | 444 | 501 J | 233 | 80.8 | 25 | 24.5 | 2800 | 3170 |
| METALS | MAGNESIUM | MG/KG | 175 J | 884 J | 177 J | 1140 J | 1420 J | 1210 J | 997 J | 1450 J | 481 J | 299 J | 306 J | 252 J | 305 J | 552 J | 1370 J | 196 J | 263 J | 41.6 J | 36.5 J | 351 J | 330 J |
| METALS | MANGANESE | MG/KG | 44.6 | 75 J | 32.2 | 165 J | 183 J | 258 J | 227 J | 423 J | 31.2 J | 3 | 2.8 | 4.3 | 14.8 | 30.8 | 205 J | 14.8 | 7 | 6.7 | 7 | 390 J | 267 J |
| METALS | MERCURY | MG/KG | 0.057 J | 0.619 J | 0.029 U | 0.681 J | 0.753 J | 0.699 J | 0.475 J | 0.504 J | 0.199 J | 0.036 U | 0.044 J | 0.035 J | 0.198 | 3.7 | 9.3 J | 0.074 J | 0.085 | 0.058 J | 0.039 J | 0.36 | 0.468 |
| METALS | NICKEL | MG/KG | 2.9 J | 13.4 J | 0.99 J | 16.5 J | 19.9 J | 18.2 J | 15.2 J | 19.5 J | 5.4 J | 1.4 J | 1.3 J | 1.5 J | 4.9 J | 4.1 J | 214 J | 2.1 J | 1.8 J | 0.47 J | 0.41 J | 7.5 | 6.7 |
| METALS | POTASSIUM | MG/KG | 120 J | 624 J | 250 J | 704 J | 887 J | 754 J | 733 J | 1020 J | 389 J | 412 J | 409 J | 428 J | 354 J | 429 J | 575 J | 207 J | 479 J | 106 J | 90.6 J | 210 J | 233 J |
| METALS | SELENIUM | MG/KG | 0.49 U | 2.3 J | 0.38 J | 1.7 UJ | 3.1 J | 2.7 J | 2.6 UJ | 2.7 J | 1.3 UJ | 0.54 J | 0.99 J | 0.71 J | 2 J | 1.5 J | 4.5 J | 1.5 J | 0.73 J | 0.66 U | 0.69 UJ | 1.6 J | 1.5 J |
| METALS | SILVER | MG/KG | 0.1 U | 0.47 J | 0.08 U | 0.44 J | 0.36 J | 0.65 J | 0.51 UJ | 0.57 J | 0.26 UJ | 0.09 U | 0.1 U | 0.1 U | 0.19 J | 9.6 | 25.6 J | 0.14 U | 0.12 J | 0.13 U | 0.14 UJ | 0.12 U | 0.11 J |
| METALS | SODIUM | MG/KG | 45.8 J | 151 J | 20.4 U | 262 J | 241 J | 232 J | 270 J | 307 J | 69.3 J | 25.6 U | 28 J | 26.1 U | 109 J | 30.5 J | 336 J | 39.1 U | 22.8 U | 25.8 U | 27.1 U | 60.9 J | 69.1 J |
| METALS | THALLIUM | MG/KG | 0.66 U | 1.6 UJ | 0.51 U | 1.6 UJ | 1.6 UJ | 1.8 UJ | 2.5 UJ | 2.5 UJ | 1.3 UJ | 0.64 U | 0.68 U | 0.65 U | 0.97 U | 0.57 U | 2 UJ | 0.98 U | 0.57 U | 0.62 UJ | 0.65 UJ | 0.78 UJ | 0.73 U |
| METALS | VANADIUM | MG/KG | 7.5 | 36.5 J | 6.9 | 48.6 J | 60.5 J | 47.2 J | 34.6 J | 48.1 J | 13.9 J | 8.4 | 7.4 | 9.5 | 17.4 | 14.8 | 24.4 J | 11.5 | 13.3 | 3.2 J | 3.2 J | 16.6 J | 15.4 J |
| METALS | ZINC | MG/KG | 63.2 | 216 J | 11.2 | 292 J | 345 J | 344 J | 331 J | 367 J | 81 J | 17.2 | 15.6 | 13.8 | 59.8 | 145 | 4900 J | 21.4 | 20.2 | 3.4 | 3.2 | 254 | 244 |
| PEST/PCB | 4,4'-DDD | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDT | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1016 | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1221 | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1232 | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1242 | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1248 | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1254 | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1260 | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | BETA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DELTA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DIELDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN I | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN II | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | METHOXYCHLOR | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | TOXAPHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 1,1'-BIPHENYL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | ACENAPHTHENE | MG/KG | 0.51 U | 1.1 UJ | 0.35 U | 0.056 J | 0.92 UJ | 0.046 J | 1.4 UJ | 1.4 UJ | 0.7 UJ | 0.45 U | 0.46 U | 0.49 U | 0.63 U | 0.089 J | 1.3 UJ | 0.63 U | 0.39 U | 0.37 U | 0.37 U | 0.038 J | 0.026 J |
| SVOC | ACENAPHTHYLENE | MG/KG | 0.51 U | 1.1 UJ | 0.35 U | 0.034 J | 0.92 UJ | 0.054 J | 1.4 UJ | 1.4 UJ | 0.7 UJ | 0.45 U | 0.46 U | 0.49 U | 0.63 U | 0.14 J | 0.035 J | 0.63 U | 0.01 J | 0.37 U | 0.37 U | 0.052 J | 0.035 J |
| SVOC | ACETOPHENONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | ANTHRACENE | MG/KG | 0.51 U | 1.1 UJ | 0.35 U | 0.042 J | 0.041 J | 0.088 J | 1.4 UJ | 1.4 UJ | 0.7 UJ | 0.45 U | 0.46 U | 0.49 U | 0.63 U | 0.48 | 0.059 J | 0.63 U | 0.01 J | 0.37 U | 0.01 J | 0.086 J | 0.065 J |
| SVOC | ATRAZINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.031 J | 0.085 J | 0.019 J | 0.3 J | 0.29 J | 0.52 J | 0.23 J | 0.23 J | 0.075 J | 0.011 J | 0.46 U | 0.013 J | 0.068 J | 2.8 | 0.32 J | 0.021 J | 0.054 J | 0.023 J | 0.046 J | 0.52 J | 0.38 J |
| SVOC | BENZO(A)PYRENE | MG/KG | 0.032 J | 0.096 J | 0.02 J | 0.31 J | 0.26 J | 0.6 J | 0.28 J | 0.28 J | 0.072 J | 0.45 U | 0.46 U | 0.49 U | 0.073 J | 2.6 | 0.31 J | 0.022 J | 0.054 J | 0.028 J | 0.052 J | 0.57 | 0.41 J |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 0.065 J | 0.24 J | 0.042 J | 0.78 J | 0.6 J | 1.1 J | 0.58 J | 0.59 J | 0.14 J | 0.016 J | 0.46 U | 0.017 J | 0.12 J | 5.6 | 0.72 J | 0.028 J | 0.11 J | 0.039 J | 0.074 J | 1 | 0.76 |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCSB0332 | HCSB0333 | HCSB0334 | HCSB0335 | HCSB0335 | HCSB0336 | HCSB0337 | HCSB0338 | HCSB0339 | HCSB0340 | HCSB0340 | HCSB0341 | HCSB0342 | HCSB0343 | HCSB0344 | HCSB0345 | HCSB0346 | HCSB0347 | HCSB0347 | HCSB0366 | HCSB0366 |
| | | Field Sample ID | HCSB0332-SS-AA-AB-0 | HCSB0333-SS-AA-AB-0 | HCSB0334-SS-AA-AB-0 | HCSB0335-SS-AA-AB-0 | HCSB0335-SS-AA-AB-1 | HCSB0336-SS-AA-AB-0 | HCSB0337-SS-AA-AB-0 | HCSB0338-SS-AA-AB-0 | HCSB0339-SS-AA-AB-0 | HCSB0340-SS-AA-AB-0 | HCSB0340-SS-AA-AB-1 | HCSB0341-SS-AA-AB-0 | HCSB0342-SS-AA-AB-0 | HCSB0343-SS-AA-AB-0 | HCSB0344-SS-AA-AB-0 | HCSB0345-SS-AA-AB-0 | HCSB0346-SS-AA-AB-0 | HCSB0347-SS-AA-AB-0 | HCSB0347-SS-AA-AB-1 | HCSB0366-SS-AA-AB-0 | HCSB0366-SS-AA-AB-1 |
| | | Sample Date | 8/23/06 | 8/23/06 | 8/23/06 | 8/24/06 | 8/24/06 | 8/24/06 | 8/24/06 | 8/24/06 | 8/24/06 | 8/28/06 | 8/28/06 | 8/28/06 | 8/28/06 | 8/28/06 | 8/28/06 | 8/28/06 | 8/28/06 | 9/12/06 | 9/12/06 | 9/19/06 | 9/19/06 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.51 U | 1.1 UJ | 0.35 U | 0.046 J | 0.023 J | 0.056 J | 1.4 UJ | 0.042 J | 0.7 UJ | 0.45 U | 0.46 U | 0.49 U | 0.63 U | 0.14 J | 1.3 UJ | 0.63 U | 0.39 U | 0.022 J | 0.022 J | 0.21 J | 0.14 J |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.017 J | 0.23 J | 0.012 J | 0.89 J | 0.15 J | 0.42 J | 0.19 J | 0.2 J | 0.05 J | 0.45 U | 0.46 U | 0.49 U | 0.044 J | 6.3 | 0.24 J | 0.63 U | 0.035 J | 0.013 J | 0.021 J | 0.29 J | 0.19 J |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | CAPROLACTAM | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | CARBAZOLE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | CHRYSENE | MG/KG | 0.044 J | 0.14 J | 0.027 J | 0.41 J | 0.42 J | 0.83 J | 0.4 J | 0.39 J | 0.1 J | 0.45 U | 0.46 U | 0.012 J | 0.09 J | 2.9 | 0.32 J | 0.024 J | 0.079 J | 0.027 J | 0.058 J | 0.63 | 0.45 J |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.51 U | 1.1 UJ | 0.35 U | 0.093 J | 0.063 J | 0.13 J | 0.069 J | 0.082 J | 0.019 J | 0.45 U | 0.46 U | 0.49 U | 0.018 J | 0.96 | 0.084 J | 0.63 U | 0.012 J | 0.37 U | 0.37 U | 0.064 J | 0.043 J |
| SVOC | DIBENZOFURAN | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIMETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | FLUORANTHENE | MG/KG | 0.066 J | 0.19 J | 0.044 J | 0.67 J | 0.64 J | 1.2 J | 0.61 J | 0.62 J | 0.16 J | 0.016 J | 0.46 U | 0.024 J | 0.15 J | 5.8 | 0.43 J | 0.039 J | 0.13 J | 0.042 J | 0.1 J | 1.3 | 0.96 |
| SVOC | FLUORENE | MG/KG | 0.51 U | 1.1 UJ | 0.35 U | 0.034 J | 0.92 UJ | 0.97 UJ | 1.4 UJ | 1.4 UJ | 0.7 UJ | 0.45 U | 0.46 U | 0.49 U | 0.63 U | 0.11 J | 1.3 UJ | 0.63 U | 0.39 U | 0.37 U | 0.37 U | 0.04 J | 0.026 J |
| SVOC | HEXACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.023 J | 0.067 J | 0.015 J | 0.3 J | 0.19 J | 0.43 J | 0.22 J | 0.25 J | 0.051 J | 0.45 U | 0.46 U | 0.49 U | 0.051 J | 2.1 | 0.2 J | 0.63 U | 0.03 J | 0.021 J | 0.028 J | 0.23 J | 0.16 J |
| SVOC | ISOPHORONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | NAPHTHALENE | MG/KG | 0.51 U | 1.1 UJ | 0.35 U | 0.42 J | 0.92 UJ | 0.97 UJ | 1.4 UJ | 1.4 UJ | 0.7 UJ | 0.45 U | 0.46 U | 0.49 U | 0.63 U | 0.024 J | 1.3 UJ | 0.63 U | 0.39 U | 0.37 U | 0.37 U | 0.032 J | 0.56 U |
| SVOC | NITROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | PENTACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | PHENANTHRENE | MG/KG | 0.025 J | 0.07 J | 0.019 J | 0.26 J | 0.22 J | 0.45 J | 0.23 J | 0.21 J | 0.063 J | 0.45 U | 0.46 U | 0.014 J | 0.071 J | 1.4 | 0.15 J | 0.018 J | 0.064 J | 0.015 J | 0.05 J | 0.51 J | 0.34 J |
| SVOC | PHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | PYRENE | MG/KG | 0.045 J | 0.14 J | 0.03 J | 0.53 J | 0.47 J | 0.98 J | 0.49 J | 0.48 J | 0.12 J | 0.013 J | 0.46 U | 0.017 J | 0.12 J | 4.1 | 0.32 J | 0.028 J | 0.098 J | 0.038 J | 0.073 J | 0.74 | 0.53 J |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMOETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | ACETONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOFORM | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON DISULFIDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON TETRACHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROFORM | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | ETHYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | ISOPROPYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ACETATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ETHYL KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYLCYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | STYRENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TETRACHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | VINYL CHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | | | | | | | | | | | | | | | | | | | | | |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCSB0374 | HCSB0375 | HCSB0375 | HCSB0390 | HCSB0391 | HCSB0394 | HCSB0398 | HCSB0399 | HCSB0410 | HCSB0412 | HCSB0413 | HCSB0414 | HCSB0415 | HCSB0416 | HCSB0417 | HCSB0418 | HCSB0419 | HCSB0420 | HCSB0421 | HCSB0422 | HCSB0423 |
| | | Field Sample ID | HCSB0374-SS-AC-AD-0 | HCSB0375-SS-AA-AB-0 | HCSB0375-SS-AC-AD-0 | HCSB0390-SS-AA-AB-0 | HCSB0391-SS-AA-AB-0 | HCSB0394-SS-AA-AB-0 | HCSB0398-SS-AA-AB-0 | HCSB0399-SS-AA-AB-0 | HCSB0410-SS-AA-AB-0 | HCSB0412-SS-AA-AB-0 | HCSB0413-SS-AA-AB-0 | HCSB0414-SS-AA-AB-0 | HCSB0415-SS-AA-AB-0 | HCSB0416-SS-AA-AB-0 | HCSB0417-SS-AA-AB-0 | HCSB0418-SS-AA-AB-0 | HCSB0419-SS-AA-AB-0 | HCSB0420-SS-AA-AB-0 | HCSB0421-SS-AA-AB-0 | HCSB0422-SS-AA-AB-0 | HCSB0423-SS-AA-AB-0 |
| | | Sample Date | 11/14/06 | 11/14/06 | 11/14/06 | 4/14/08 | 4/14/08 | 4/15/08 | 4/15/08 | 4/16/08 | 4/17/08 | 4/21/08 | 4/21/08 | 4/21/08 | 4/21/08 | 4/21/08 | 4/21/08 | 4/22/08 | 4/22/08 | 4/22/08 | 4/22/08 | 4/22/08 | 4/22/08 |
| | | Depth (ft) | 1-1.5 | 0-0.5 | 1-1.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 9470 J | 10500 J | 13100 J | 6620 J | 4840 J | 10700 J | 672 | 10300 J | 3070 J | 3760 | 870 | 744 | 982 | 796 | 2340 | 873 | 827 | 968 | 1140 | 668 | 855 |
| METALS | ANTIMONY | MG/KG | 22.7 J | 6.3 J | 22.3 J | 6.3 J | 4.7 J | 11.8 J | 0.7 UJ | 14.3 J | 1.6 UJ | 1.6 J | 0.64 UJ | 2.5 J | 0.59 UJ | 0.71 J | 0.65 UJ | 0.65 UJ | 0.62 UJ | 0.63 UJ | 0.66 UJ | 0.76 J | 0.67 UJ |
| METALS | ARSENIC | MG/KG | 431 J | 334 J | 1590 J | 334 J | 115 J | 457 J | 0.98 U | 502 J | 4.5 J | 5.1 | 2.1 J | 1.9 J | 1.9 J | 1.9 J | 0.92 U | 0.92 U | 0.87 U | 0.97 J | 4 | 0.87 U | 2.2 J |
| METALS | BARIUM | MG/KG | 18500 J | 4950 J | 14000 J | 9730 J | 579 J | 13900 J | 6.5 J | 14000 J | 37.8 J | 81.9 | 8.1 J | 21.8 J | 5.2 J | 10.1 J | 6 J | 26.6 J | 14.3 J | 116 | 30 J | 4.7 J | 7.3 J |
| METALS | BERYLLIUM | MG/KG | 0.32 J | 0.55 J | 0.57 J | 0.32 J | 0.25 J | 0.46 J | 0.02 U | 0.5 J | 0.18 J | 0.25 J | 0.08 J | 0.05 J | 0.08 J | 0.06 J | 0.06 J | 0.03 J | 0.03 J | 0.03 J | 0.05 J | 0.03 J | 0.02 U |
| METALS | CADMIUM | MG/KG | 26.3 J | 4.2 J | 27.5 J | 3.4 J | 0.93 J | 7.4 J | 0.1 U | 18 J | 0.37 J | 0.27 J | 0.13 J | 0.1 U | 0.08 U | 0.09 U | 0.09 U | 0.09 U | 0.16 J | 0.12 J | 0.2 J | 0.08 U | 0.09 U |
| METALS | CALCIUM | MG/KG | 1080 J | 4530 J | 3890 J | 8420 J | 4540 J | 6820 J | 48.4 J | 3370 J | 1630 J | 1510 J | 262 J | 357 J | 91.3 J | 147 J | 17.1 J | 376 J | 384 J | 510 J | 906 J | 121 J | 103 J |
| METALS | CHROMIUM | MG/KG | 10100 J | 738 J | 4120 J | 234 J | 112 J | 1970 J | 20.9 | 3680 J | 18.3 J | 14.4 | 5.7 J | 4.4 J | 6.1 J | 4.2 | 3.9 | 6.3 | 4.5 | 4.1 | 9.8 | 4.4 | 4.4 |
| METALS | COBALT | MG/KG | 3.9 J | 12 J | 6.5 J | 10.6 J | 2.5 UJ | 6.4 J | 0.91 U | 5.1 J | 2.1 UJ | 2.8 J | 0.84 U | 0.99 U | 0.78 U | 0.86 U | 0.86 U | 0.85 U | 0.81 U | 0.82 U | 0.86 U | 0.8 U | 0.87 U |
| METALS | COPPER | MG/KG | 72.6 J | 142 J | 419 J | 99 J | 83.8 J | 139 J | 1.6 J | 103 J | 5.7 J | 102 J | 2.6 J | 5.6 J | 1.7 J | 2.3 J | 0.39 J | 4.2 J | 1.3 J | 4.2 J | 8.4 | 1.2 J | 1.7 J |
| METALS | CYANIDE | MG/KG | 495 J | 174 J | 386 J | 35 J | 29.6 J | 324 J | 0.02 U | 312 J | 3.6 J | 0.9 | 0.02 U | 0.2 J | 0.02 U | 0.02 U | 0.02 U | 0.02 U | 0.02 U | 0.02 U | 0.02 U | 0.02 U | 0.02 U |
| METALS | IRON | MG/KG | 21900 J | 38700 J | 34500 J | 52200 J | 21400 J | 20200 J | 1200 | 22800 J | 13900 J | 4990 | 1780 | 2020 | 2010 | 1610 | 2550 | 1740 | 1580 | 1510 | 2130 | 1550 | 1910 |
| METALS | LEAD | MG/KG | 114000 J | 6950 J | 50300 J | 1480 J | 827 J | 27200 J | 23.1 | 40700 J | 178 J | 120 | 17.6 | 245 | 17.5 | 36.6 | 3.3 | 53.6 | 26.9 | 26.4 | 49.8 | 38.4 | 36.4 |
| METALS | MAGNESIUM | MG/KG | 478 J | 840 J | 519 J | 787 J | 597 J | 861 J | 107 J | 713 J | 331 J | 362 J | 128 J | 151 J | 150 J | 107 J | 32.4 J | 146 J | 132 J | 78.1 J | 138 J | 97.3 J | 81.8 J |
| METALS | MANGANESE | MG/KG | 41 J | 859 J | 152 J | 133 J | 239 J | 135 J | 5.9 | 152 J | 37 J | 39.9 | 11.7 | 16.4 | 15.5 | 7 | 5.9 | 12.9 | 30.6 | 23.1 | 32.9 | 11.4 | 13.1 |
| METALS | MERCURY | MG/KG | 2.9 J | 1.4 J | 2.8 J | 1.8 J | 0.43 J | 3.1 J | 0.06 U | 2.1 J | 0.24 J | 0.16 J | 0.05 U | 0.06 U | 0.05 U | 0.11 J | 0.06 U | 0.05 U | 0.05 U | 0.05 U | 0.85 | 0.05 U | 0.05 U |
| METALS | NICKEL | MG/KG | 1 J | 15.7 J | 11 J | 23.3 J | 7 J | 7.4 J | 0.24 U | 3.8 J | 0.7 J | 8.3 J | 0.22 U | 0.94 J | 0.2 U | 0.41 J | 0.23 U | 1.7 J | 0.29 J | 0.67 J | 1.2 J | 0.25 J | 0.66 J |
| METALS | POTASSIUM | MG/KG | 1360 J | 500 J | 440 J | 509 J | 704 J | 434 J | 230 J | 635 J | 540 J | 431 J | 300 J | 248 J | 353 J | 238 J | 80 U | 227 J | 185 J | 187 J | 202 J | 252 J | 196 J |
| METALS | SELENIUM | MG/KG | 2.7 J | 4.7 J | 5.8 J | 4.9 UJ | 3.2 UJ | 3.9 UJ | 1.2 U | 3.7 J | 2.7 UJ | 1.6 U | 1.1 U | 1.3 U | 1 U | 1.1 U | 1.1 UJ | 1.1 UJ | 1 UJ | 1.1 UJ | 1.1 UJ | 1 UJ | 1.2 J |
| METALS | SILVER | MG/KG | 1.5 J | 0.48 J | 0.5 J | 0.79 UJ | 0.52 UJ | 0.64 UJ | 0.19 U | 1.1 J | 0.44 UJ | 0.26 U | 0.18 U | 0.21 U | 0.16 U | 0.18 U | 0.18 U | 0.18 U | 0.17 U | 0.17 U | 0.18 U | 0.17 U | 0.18 U |
| METALS | SODIUM | MG/KG | 1520 J | 413 J | 122 J | 509 J | 712 J | 354 UJ | 106 U | 245 UJ | 244 UJ | 145 U | 96.9 U | 114 U | 90.1 U | 99.7 U | 99.2 U | 98.5 U | 94.1 U | 95.1 U | 100 U | 93.1 U | 101 U |
| METALS | THALLIUM | MG/KG | 3.9 J | 2.6 UJ | 3.3 UJ | 5.1 UJ | 3.4 UJ | 4.2 UJ | 1.2 UJ | 2.9 UJ | 2.9 UJ | 1.7 U | 1.1 U | 1.4 U | 1.1 U | 1.2 U | 1.2 U | 1.2 U | 1.1 U | 1.1 U | 1.2 U | 1.1 U | 1.2 U |
| METALS | VANADIUM | MG/KG | 9.9 J | 45.8 J | 32.8 J | 36.4 J | 26.8 J | 36 J | 4.2 J | 31.4 J | 9.8 J | 14.6 J | 3.7 J | 5.7 J | 4.3 J | 4.7 J | 4.6 J | 6.9 J | 3.2 J | 3.4 J | 4.8 J | 3.4 J | 5 J |
| METALS | ZINC | MG/KG | 2670 J | 968 J | 2080 J | 1920 J | 188 J | 953 J | 5.3 J | 1030 J | 100 J | 50.5 | 9.1 J | 24.4 | 5.5 J | 7 | 4.6 | 48.8 | 20.2 | 32.3 | 57 | 4.8 | 10.7 |
| PEST/PCB | 4,4'-DDD | MG/KG | 0.0073 UJ | 0.0092 UJ | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDE | MG/KG | 0.0073 UJ | 0.0092 UJ | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDT | MG/KG | 0.0073 UJ | 0.0092 UJ | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALDRIN | MG/KG | 0.0038 UJ | 0.0047 UJ | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-BHC | MG/KG | 0.0038 UJ | 0.0047 UJ | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | 0.0038 UJ | 0.0047 UJ | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1016 | MG/KG | 0.073 UJ | 0.092 UJ | | 0.16 UJ | 0.11 UJ | 0.13 UJ | 0.041 UJ | 0.093 UJ | 0.093 UJ | 0.055 U | 0.038 U | 0.044 U | 0.036 U | 0.04 U | 0.04 U | 0.038 UJ | 0.036 UJ | 0.036 UJ | 0.038 UJ | 0.035 UJ | 0.038 UJ |
| PEST/PCB | AROCLOR-1221 | MG/KG | 0.15 UJ | 0.19 UJ | | 0.16 UJ | 0.11 UJ | 0.13 UJ | 0.041 U | 0.093 UJ | 0.093 UJ | 0.055 U | 0.038 U | 0.044 U | 0.036 U | 0.04 U | 0.04 U | 0.038 U | 0.036 U | 0.036 U | 0.038 U | 0.035 U | 0.038 U |
| PEST/PCB | AROCLOR-1232 | MG/KG | 0.073 UJ | 0.092 UJ | | 0.16 UJ | 0.11 UJ | 0.13 UJ | 0.041 U | 0.093 UJ | 0.093 UJ | 0.055 U | 0.038 U | 0.044 U | 0.036 U | 0.04 U | 0.04 U | 0.038 U | 0.036 U | 0.036 U | 0.038 U | 0.035 U | 0.038 U |
| PEST/PCB | AROCLOR-1242 | MG/KG | 0.073 UJ | 0.092 UJ | | 0.16 UJ | 0.11 UJ | 0.13 UJ | 0.041 U | 0.093 UJ | 0.093 UJ | 0.055 U | 0.038 U | 0.044 U | 0.036 U | 0.04 U | 0.04 U | 0.038 U | 0.036 U | 0.036 U | 0.038 U | 0.035 U | 0.038 U |
| PEST/PCB | AROCLOR-1248 | MG/KG | 0.073 UJ | 0.092 UJ | | 0.16 UJ | 0.11 UJ | 0.13 UJ | 0.041 U | 0.093 UJ | 0.093 UJ | 0.055 U | 0.038 U | 0.044 U | 0.036 U | 0.04 U | 0.04 U | 0.038 U | 0.036 U | 0.036 U | 0.038 U | 0.035 U | 0.038 U |
| PEST/PCB | AROCLOR-1254 | MG/KG | 0.073 UJ | 0.092 UJ | | 0.16 UJ | 0.11 UJ | 0.13 UJ | 0.041 U | 0.093 UJ | 0.093 UJ | 0.055 U | 0.038 U | 0.044 U | 0.036 U | 0.04 U | 0.04 U | 0.038 U | 0.036 U | 0.036 U | 0.038 U | 0.035 U | 0.038 U |
| PEST/PCB | AROCLOR-1260 | MG/KG | 0.073 UJ | 0.092 UJ | | 0.31 J | 0.22 J | 0.15 J | 0.041 UJ | 0.2 J | 0.093 UJ | 0.055 U | 0.038 U | 0.044 U | 0.036 U | 0.04 U | 0.04 U | 0.038 UJ | 0.036 UJ | 0.036 UJ | 0.038 UJ | 0.035 UJ | 0.038 UJ |
| PEST/PCB | BETA-BHC | MG/KG | 0.0038 UJ | 0.0047 UJ | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DELTA-BHC | MG/KG | 0.0038 UJ | 0.0047 UJ | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DIELDRIN | MG/KG | 0.0073 UJ | 0.0092 UJ | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN I | MG/KG | 0.0038 UJ | 0.0047 UJ | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN II | MG/KG | 0.0073 UJ | 0.0092 UJ | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | 0.0073 UJ | 0.0092 UJ | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN | MG/KG | 0.0073 UJ | 0.0092 UJ | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | 0.0073 UJ | 0.0092 UJ | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN KETONE | MG/KG | 0.0073 UJ | 0.0092 UJ | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | 0.0038 UJ | 0.0047 UJ | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | 0.0038 UJ | 0.0047 UJ | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR | MG/KG | 0.0038 UJ | 0.0047 UJ | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | 0.0038 UJ | 0.0047 UJ | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | METHOXYCHLOR | MG/KG | 0.038 UJ | 0.047 UJ | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | TOXAPHENE | MG/KG | 0.38 UJ | 0.47 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | 1,1'-BIPHENYL | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | 3.5 UJ | 2.2 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROPHENOL | MG/KG | 3.5 UJ | 2.2 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLOROPHENOL | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | 0.055 J | 0.037 J | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLPHENOL | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROANILINE | MG/KG | 3.5 UJ | 2.2 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROPHENOL | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | 3-NITROANILINE | MG/KG | 3.5 UJ | 2.2 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | 3.5 UJ | 2.2 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROANILINE | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-METHYLPHENOL | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROANILINE | MG/KG | 3.5 UJ | 2.2 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROPHENOL | MG/KG | 3.5 UJ | 2.2 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | ACENAPHTHENE | MG/KG | 1.5 UJ | 0.1 J | | 0.14 J | 0.04 J | 0.032 J | 0.41 U | 0.036 J | 0.91 UJ | 0.54 U | 0.37 U | 0.43 U | 0.35 U | 0.01 J | 0.39 U | 0.38 U | 0.36 U | 0.36 U | 0.38 U | 0.35 U | 0.38 U |
| SVOC | ACENAPHTHYLENE | MG/KG | 0.026 J | 0.076 J | | 1.6 UJ | 0.022 J | 0.019 J | 0.41 U | 0.012 J | 0.91 UJ | 0.54 U | 0.37 U | 0.013 J | 0.35 U | 0.004 J | 0.39 U | 0.38 U | 0.36 U | 0.36 U | 0.38 U | 0.35 U | 0.38 U |
| SVOC | ACETOPHENONE | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | ANTHRACENE | MG/KG | 0.12 J | 0.21 J | | 0.16 J | 0.066 J | 0.058 J | 0.41 U | 0.083 J | 0.91 UJ | 0.54 U | 0.37 U | 0.013 J | 0.35 U | 0.011 J | 0.39 U | 0.38 U | 0.36 U | 0.36 U | 0.38 U | 0.35 U | 0.38 U |
| SVOC | ATRAZINE | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZALDEHYDE | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.34 J | 0.99 J | | 0.68 J | 0.51 J | 0.38 J | 0.012 J | 0.34 J | 0.018 J | 0.018 J | 0.006 J | 0.036 J | 0.35 U | 0.044 J | 0.39 U | 0.008 J | 0.36 U | 0.013 J | 0.022 J | 0.35 U | 0.012 J |
| SVOC | BENZO(A)PYRENE | MG/KG | 1.5 UJ | 1.6 J | | 0.63 J | 0.52 J | 0.38 J | 0.008 J | 0.29 J | 0.02 J | 0.021 J | 0.008 J | 0.037 J | 0.35 U | 0.048 J | 0.39 U | 0.01 J | 0.005 J | 0.013 J | 0.026 J | 0.35 U | 0.013 J |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 1.5 UJ | 1.8 J | | 1 J | 0.96 J | 0.67 J | 0.014 J | 0.46 J | 0.027 J | 0.028 J | 0.008 J | 0.058 J | 0.35 U | 0.066 J | 0.39 U | 0.019 J | 0.007 J | 0.019 J | 0.038 J | 0.006 J | 0.024 J |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCSB0374 | HCSB0375 | HCSB0375 | HCSB0390 | HCSB0391 | HCSB0394 | HCSB0398 | HCSB0399 | HCSB0410 | HCSB0412 | HCSB0413 | HCSB0414 | HCSB0415 | HCSB0416 | HCSB0417 | HCSB0418 | HCSB0419 | HCSB0420 | HCSB0421 | HCSB0422 | HCSB0423 |
| | | Field Sample ID | HCSB0374-SS-AC-AD-0 | HCSB0375-SS-AA-AB-0 | HCSB0375-SS-AC-AD-0 | HCSB0390-SS-AA-AB-0 | HCSB0391-SS-AA-AB-0 | HCSB0394-SS-AA-AB-0 | HCSB0398-SS-AA-AB-0 | HCSB0399-SS-AA-AB-0 | HCSB0410-SS-AA-AB-0 | HCSB0412-SS-AA-AB-0 | HCSB0413-SS-AA-AB-0 | HCSB0414-SS-AA-AB-0 | HCSB0415-SS-AA-AB-0 | HCSB0416-SS-AA-AB-0 | HCSB0417-SS-AA-AB-0 | HCSB0418-SS-AA-AB-0 | HCSB0419-SS-AA-AB-0 | HCSB0420-SS-AA-AB-0 | HCSB0421-SS-AA-AB-0 | HCSB0422-SS-AA-AB-0 | HCSB0423-SS-AA-AB-0 |
| | | Sample Date | 11/14/06 | 11/14/06 | 11/14/06 | 4/14/08 | 4/14/08 | 4/15/08 | 4/15/08 | 4/16/08 | 4/17/08 | 4/21/08 | 4/21/08 | 4/21/08 | 4/21/08 | 4/21/08 | 4/21/08 | 4/22/08 | 4/22/08 | 4/22/08 | 4/22/08 | 4/22/08 | 4/22/08 |
| | | Depth (ft) | 1-1.5 | 0-0.5 | 1-1.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 1.5 UJ | 0.45 J | | 0.069 J | 0.053 J | 0.046 J | 0.41 U | 0.036 J | 0.91 UJ | 0.006 J | 0.004 J | 0.008 J | 0.35 U | 0.009 J | 0.39 U | 0.38 U | 0.36 U | 0.36 U | 0.38 U | 0.35 U | 0.38 U |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 1.5 UJ | 1.8 J | | 1 J | 0.97 J | 0.59 J | 0.017 J | 0.43 J | 0.023 J | 0.026 J | 0.009 J | 0.047 J | 0.35 U | 0.068 J | 0.39 U | 0.017 J | 0.007 J | 0.015 J | 0.04 J | 0.004 J | 0.022 J |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | 1.5 UJ | 0.33 J | | | | | | | | | | | | | | | | | | | |
| SVOC | CAPROLACTAM | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | CARBAZOLE | MG/KG | 1.5 UJ | 0.26 J | | | | | | | | | | | | | | | | | | | |
| SVOC | CHRYSENE | MG/KG | 0.62 J | 1.3 J | | 1 J | 0.85 J | 0.56 J | 0.016 J | 0.39 J | 0.031 J | 0.032 J | 0.013 J | 0.053 J | 0.35 U | 0.074 J | 0.39 U | 0.016 J | 0.008 J | 0.022 J | 0.037 J | 0.006 J | 0.022 J |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 1.5 UJ | 0.21 J | | 0.077 J | 0.075 J | 0.047 J | 0.41 U | 0.038 J | 0.91 UJ | 0.006 J | 0.37 U | 0.009 J | 0.35 U | 0.01 J | 0.39 U | 0.38 U | 0.36 U | 0.005 J | 0.38 UJ | 0.35 U | 0.38 U |
| SVOC | DIBENZOFURAN | MG/KG | 0.052 J | 0.046 J | | | | | | | | | | | | | | | | | | | |
| SVOC | DIETHYLPHTHALATE | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | DIMETHYLPHTHALATE | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | FLUORANTHENE | MG/KG | 1.1 J | 3.2 J | | 2.2 J | 1.7 J | 1.1 J | 0.027 J | 0.79 J | 0.045 J | 0.047 J | 0.017 J | 0.11 J | 0.35 U | 0.12 J | 0.39 U | 0.018 J | 0.006 J | 0.026 J | 0.04 J | 0.008 J | 0.027 J |
| SVOC | FLUORENE | MG/KG | 1.5 UJ | 0.11 J | | 0.1 J | 0.041 J | 0.035 J | 0.41 U | 0.037 J | 0.91 UJ | 0.54 U | 0.37 U | 0.011 J | 0.35 U | 0.007 J | 0.39 U | 0.38 U | 0.36 U | 0.36 U | 0.38 U | 0.35 U | 0.38 U |
| SVOC | HEXACHLOROBENZENE | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROETHANE | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 1.5 UJ | 0.61 J | | 0.2 J | 0.21 J | 0.14 J | 0.006 J | 0.088 J | 0.014 J | 0.012 J | 0.006 J | 0.018 J | 0.35 U | 0.021 J | 0.39 U | 0.38 U | 0.36 U | 0.01 J | 0.009 J | 0.35 U | 0.38 U |
| SVOC | ISOPHORONE | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | NAPHTHALENE | MG/KG | 0.082 J | 0.048 J | | 0.04 J | 0.019 J | 0.062 J | 0.41 U | 0.038 J | 0.91 UJ | 0.54 U | 0.37 U | 0.43 U | 0.35 U | 0.004 J | 0.39 U | 0.38 U | 0.36 U | 0.36 U | 0.38 U | 0.35 U | 0.38 U |
| SVOC | NITROBENZENE | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | PENTACHLOROPHENOL | MG/KG | 3.5 UJ | 0.04 J | | | | | | | | | | | | | | | | | | | |
| SVOC | PHENANTHRENE | MG/KG | 0.41 J | 1.1 J | | 0.98 J | 0.59 J | 0.37 J | 0.016 J | 0.37 J | 0.023 J | 0.027 J | 0.009 J | 0.085 J | 0.35 U | 0.078 J | 0.39 U | 0.009 J | 0.36 U | 0.009 J | 0.019 J | 0.005 J | 0.015 J |
| SVOC | PHENOL | MG/KG | 1.5 UJ | 0.92 UJ | | | | | | | | | | | | | | | | | | | |
| SVOC | PYRENE | MG/KG | 0.33 J | 2.8 J | | 1.5 J | 1.2 J | 0.68 J | 0.022 J | 0.52 J | 0.047 J | 0.048 J | 0.017 J | 0.1 J | 0.35 U | 0.12 J | 0.39 U | 0.021 J | 0.007 J | 0.027 J | 0.055 J | 0.008 J | 0.03 J |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHANE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHENE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMOETHANE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROETHANE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | ACETONE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | BENZENE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOFORM | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOMETHANE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON DISULFIDE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON TETRACHLORIDE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROBENZENE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROETHANE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROFORM | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROMETHANE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | CYCLOHEXANE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLOROMETHANE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | ETHYLBENZENE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | ISOPROPYLBENZENE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ACETATE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ETHYL KETONE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | METHYLCYCLOHEXANE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | STYRENE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | TETRACHLOROETHENE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | TOLUENE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | VINYL CHLORIDE | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | 0.029 UJ | 0.039 UJ | | | | | | | | | | | | | | | | | | | |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCSB0424 | HCSB0425 | HCSB0426 | HCSB0428 | HCSB0435 | HCSB0446 | HCSB0458 | HCSB0465 | HCSB0466 | HCSB0466 | HCSB0472 | HCSB0477 | HCSB0480 | HCSB0482 | HCSB0483 | HCSB0484 | HCSB0485 | RSSB0023 | RSSB0023 | RSSB0024 | RSSB0024 |
| | | Field Sample ID | HCSB0424-SS-AA-AB-0 | HCSB0425-SS-AA-AB-0 | HCSB0426-SS-AA-AB-0 | HCSB0428-SS-AA-AB-0 | HCSB0435-SS-AA-AB-0 | HCSB0446-SS-AA-AB-0 | HCSB0458-SS-AA-AB-0 | HCSB0465-SS-AA-AB-0 | HCSB0466-SS-AA-AB-0 | HCSB0466-SS-AA-AB-1 | HCSB0472-SS-AA-AB-0 | HCSB0477-SS-AA-AB-0 | HCSB0480-SS-AA-AB-0 | HCSB0482-SS-AA-AB-0 | HCSB0483-SS-AA-AB-0 | HCSB0484-SS-AA-AB-0 | HCSB0485-SS-AA-AB-0 | RSSB0023-SS-AA-AB-0 | RSSB0023-SS-AD-AE-0 | RSSB0024-SS-AA-AB-0 | RSSB0024-SS-AD-AE-0 |
| | | Sample Date | 4/22/08 | 4/23/08 | 4/23/08 | 4/29/08 | 4/30/08 | 5/6/08 | 5/14/08 | 5/19/08 | 5/19/08 | 5/19/08 | 5/19/08 | 5/21/08 | 5/21/08 | 6/17/08 | 6/17/08 | 6/17/08 | 6/17/08 | 7/2/07 | 7/2/07 | 7/2/07 | 7/2/07 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 1.5-2 | 0-0.5 | 1.5-2 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 2350 | 1440 | 1550 | 1960 | 1740 | 2550 | 1500 | 767 | 1100 | 1240 | 980 | 1890 | 2060 | 2170 | 3310 | 2450 | 2170 | 988 | 153 | 1410 | 102 |
| METALS | ANTIMONY | MG/KG | 0.61 UJ | 0.89 J | 0.82 UJ | 1.5 J | 2.7 J | 1.1 UJ | 1.5 UJ | 1 UJ | 0.93 UJ | 0.91 UJ | 1.4 UJ | 1.2 UJ | 1.6 J | 0.92 UJ | 0.82 UJ | 0.86 UJ | 0.88 UJ | 1.1 UJ | 1 UJ | 2 J | 1 UJ |
| METALS | ARSENIC | MG/KG | 3.2 J | 3 | 5.8 | 2.9 J | 6 | 21 J | 3.8 J | 9.2 | 2.9 | 2.7 | 2.4 J | 4.4 | 7.4 | 4.8 | 2 J | 1.6 J | 3.2 | 0.97 U | 0.85 U | 4.1 | 0.88 U |
| METALS | BARIUM | MG/KG | 10.4 J | 42.8 J | 72.4 | 19.9 J | 19.7 J | 37.9 J | 39.5 J | 16.9 J | 16.8 J | 14.3 J | 12.2 J | 40.1 J | 30.9 J | 15.4 J | 7.9 J | 8.8 J | 45.1 J | 9.4 J | 2.2 J | 44.5 J | 2.2 J |
| METALS | BERYLLIUM | MG/KG | 0.03 J | 0.04 J | 0.03 U | 0.06 J | 0.05 J | 0.41 U | 0.54 U | 0.36 U | 0.34 U | 0.33 U | 0.38 U | 0.43 U | 0.41 U | 0.33 U | 0.29 U | 0.31 U | 0.32 U | 0.04 J | 0.02 U | 0.07 J | 0.02 U |
| METALS | CADMIUM | MG/KG | 0.08 U | 0.48 J | 0.19 J | 0.14 U | 0.14 U | 0.38 U | 0.5 U | 0.34 U | 0.31 U | 0.3 U | 0.36 U | 0.4 U | 0.38 U | 0.31 U | 0.27 U | 0.29 U | 0.29 U | 0.08 U | 0.07 U | 0.11 J | 0.07 U |
| METALS | CALCIUM | MG/KG | 197 J | 3610 | 877 J | 91.9 J | 106 J | 1890 | 1110 J | 336 J | 57.8 J | 42.5 J | 123 J | 864 J | 177 J | 530 J | 62.6 J | 183 J | 1160 | 84.1 J | 28.8 J | 777 J | 36 J |
| METALS | CHROMIUM | MG/KG | 6.1 | 7 | 9.4 | 9.8 | 5.5 | 17.3 | 6.9 | 7.3 | 6.5 | 6.9 | 2.5 J | 12.9 | 6.9 | 6.4 | 9.1 | 7.1 | 10.9 | 1.7 J | 1.5 J | 3 J | 0.53 J |
| METALS | COBALT | MG/KG | 0.8 U | 1.1 U | 1.1 U | 1.3 U | 1.3 U | 1.5 U | 2 U | 1.3 U | 1.2 U | 1.2 U | 1.4 U | 1.6 U | 1.5 U | 1.2 U | 1.1 U | 1.1 U | 1.2 U | 0.27 U | 0.24 U | 0.32 U | 0.24 U |
| METALS | COPPER | MG/KG | 2.7 J | 7.7 | 12 | 3.7 J | 8.6 J | 8.2 | 5.3 J | 5.8 J | 3.9 J | 2.3 J | 5.8 J | 3.7 J | 66 | 4 J | 1.8 J | 2.4 J | 6.6 | 3.4 J | 0.62 U | 14 | 0.7 J |
| METALS | CYANIDE | MG/KG | 0.02 U | 0.02 U | 0.02 U | 0.08 J | 0.03 U | 0.02 U | 0.18 J | 0.12 J | 0.16 J | 0.02 UJ | 0.02 U | 0.13 J | 0.02 U | 0.02 U | 0.02 U | 0.02 U | 0.02 U | 0.12 U | 0.26 J | 0.14 U | 0.11 U |
| METALS | IRON | MG/KG | 2760 | 2150 | 2490 | 1210 | 2360 | 5480 | 2110 | 1310 | 2450 | 2700 | 1020 | 2200 | 2830 | 2990 | 4890 | 3270 | 3460 | 679 | 189 | 1760 | 129 |
| METALS | LEAD | MG/KG | 60 | 66.5 | 80 | 53.8 | 115 | 111 | 46 | 60.1 | 43.2 | 32 | 68.8 | 93.7 | 118 | 14 | 8.2 | 11.7 | 45.7 | 22.1 | 2.8 J | 87.7 | 2.4 J |
| METALS | MAGNESIUM | MG/KG | 85.8 J | 253 J | 224 J | 84.7 J | 104 J | 432 J | 105 J | 89.1 J | 182 J | 224 J | 70.5 J | 137 J | 144 J | 125 J | 110 J | 107 J | 243 J | 28.7 J | 9.3 J | 177 J | 8.2 J |
| METALS | MANGANESE | MG/KG | 22 | 105 | 13.3 | 6.4 | 10.2 | 10.2 | 6.5 | 4.7 | 5.2 | 5.2 | 7.1 | 7.7 | 13.5 | 18.1 | 6.3 | 9.1 | 26.9 | 4.5 | 4.3 | 18.6 | 1.5 J |
| METALS | MERCURY | MG/KG | 0.05 U | 0.1 J | 0.1 J | 0.07 U | 0.11 J | 0.16 | 0.1 U | 0.07 U | 0.06 U | 0.06 U | 0.11 J | 0.08 U | 0.22 | 0.041 J | 0.012 U | 0.013 U | 0.014 U | 0.06 U | 0.06 U | 0.12 J | 0.06 U |
| METALS | NICKEL | MG/KG | 0.83 J | 2.1 J | 1.3 J | 1.2 J | 2.2 J | 2.6 J | 1.7 J | 1.1 U | 1.1 J | 1 J | 1.4 J | 2 J | 3.2 J | 0.99 U | 0.88 U | 0.93 U | 1.7 J | 0.46 J | 0.28 U | 3.5 J | 0.29 U |
| METALS | POTASSIUM | MG/KG | 144 J | 299 J | 424 J | 125 U | 157 J | 763 J | 189 J | 127 J | 395 J | 529 J | 125 U | 162 J | 283 J | 176 J | 222 J | 210 J | 203 J | 24.4 U | 21.4 U | 160 J | 22 U |
| METALS | SELENIUM | MG/KG | 1 UJ | 1.4 U | 1.4 U | 3.4 | 2.7 J | 1.3 U | 1.7 UJ | 1.2 U | 1.1 U | 1.1 U | 1.2 U | 1.4 U | 1.3 U | 1.1 UJ | 0.95 UJ | 1 UJ | 1 UJ | 1.3 U | 1.1 U | 1.5 U | 1.1 U |
| METALS | SILVER | MG/KG | 0.17 U | 0.23 U | 0.23 U | 0.28 U | 0.28 U | 0.24 U | 0.31 U | 0.21 U | 0.19 U | 0.19 U | 0.22 U | 0.24 U | 0.23 U | 0.19 U | 0.17 U | 0.19 J | 0.18 U | 0.27 U | 0.24 U | 0.32 U | 0.24 U |
| METALS | SODIUM | MG/KG | 92.4 U | 128 U | 125 U | 155 U | 152 U | 147 U | 191 U | 130 U | 120 U | 116 U | 137 U | 219 J | 145 U | 117 U | 105 U | 110 U | 113 U | 108 J | 101 J | 175 J | 71.8 J |
| METALS | THALLIUM | MG/KG | 1.1 U | 1.5 UJ | 1.5 U | 1.8 UJ | 1.8 U | 1.4 U | 1.9 U | 1.3 U | 1.2 U | 1.1 U | 1.3 U | 1.5 U | 1.4 U | 1.2 U | 1 U | 1.1 U | 1.1 U | 1.3 U | 1.2 U | 1.6 U | 1.2 U |
| METALS | VANADIUM | MG/KG | 7 J | 6.5 J | 6.8 J | 4.2 J | 11.6 J | 11.5 J | 6.8 J | 3.9 J | 5.9 J | 6 J | 7.4 J | 7.9 J | 15.5 | 6.1 J | 9.8 J | 9.1 J | 7.8 J | 3.6 J | 2 J | 8.2 J | 0.58 J |
| METALS | ZINC | MG/KG | 13.6 | 52.3 | 17.4 | 8.4 | 13 | 51.7 | 18.3 J | 6.7 J | 8.2 J | 9.6 J | 15.9 J | 20.8 | 14.7 | 24.6 | 3.4 J | 5.3 | 29.1 | 5.6 | 0.83 U | 25.6 | 1 J |
| PEST/PCB | 4,4'-DDD | MG/KG | | | | | | | | | | | | | | | | | | 0.0046 U | 0.004 U | 0.0055 U | 0.0041 U |
| PEST/PCB | 4,4'-DDE | MG/KG | | | | | | | | | | | | | | | | | | 0.0046 U | 0.004 U | 0.0055 U | 0.0041 U |
| PEST/PCB | 4,4'-DDT | MG/KG | | | | | | | | | | | | | | | | | | 0.0046 U | 0.004 U | 0.0094 | 0.0041 U |
| PEST/PCB | ALDRIN | MG/KG | | | | | | | | | | | | | | | | | | 0.0024 U | 0.0021 U | 0.0028 U | 0.0021 U |
| PEST/PCB | ALPHA-BHC | MG/KG | | | | | | | | | | | | | | | | | | 0.0024 U | 0.0021 U | 0.0028 U | 0.0021 U |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | 0.0091 | 0.0021 U | 0.0028 U | 0.0021 U |
| PEST/PCB | AROCLOR-1016 | MG/KG | 0.036 UJ | 0.048 U | 0.05 U | 0.059 U | 0.43 U | 0.049 U | 0.064 U | 0.044 U | 0.041 U | 0.041 U | 0.048 U | 0.1 U | 0.1 U | 0.039 U | 0.037 U | 0.038 U | 0.04 U | 0.046 U | 0.04 U | 0.055 U | 0.041 U |
| PEST/PCB | AROCLOR-1221 | MG/KG | 0.036 U | 0.048 U | 0.05 U | 0.059 U | 0.43 U | 0.049 U | 0.064 U | 0.044 U | 0.041 U | 0.041 U | 0.048 U | 0.1 U | 0.1 U | 0.039 U | 0.037 U | 0.038 U | 0.04 U | 0.094 U | 0.082 U | 0.11 U | 0.084 U |
| PEST/PCB | AROCLOR-1232 | MG/KG | 0.036 U | 0.048 U | 0.05 U | 0.059 U | 0.43 U | 0.049 U | 0.064 U | 0.044 U | 0.041 U | 0.041 U | 0.048 U | 0.1 U | 0.1 U | 0.039 U | 0.037 U | 0.038 U | 0.04 U | 0.046 U | 0.04 U | 0.055 U | 0.041 U |
| PEST/PCB | AROCLOR-1242 | MG/KG | 0.036 U | 0.048 U | 0.05 U | 0.059 U | 0.43 U | 0.049 U | 0.064 U | 0.044 U | 0.041 U | 0.041 U | 0.048 U | 0.1 U | 0.1 U | 0.039 U | 0.037 U | 0.038 U | 0.04 U | 0.046 U | 0.04 U | 0.055 U | 0.041 U |
| PEST/PCB | AROCLOR-1248 | MG/KG | 0.036 U | 0.048 U | 0.05 U | 0.059 U | 0.43 U | 0.049 U | 0.064 U | 0.044 U | 0.041 U | 0.041 U | 0.048 U | 0.1 U | 0.1 U | 0.039 U | 0.037 U | 0.038 U | 0.04 U | 0.046 U | 0.04 U | 0.055 U | 0.041 U |
| PEST/PCB | AROCLOR-1254 | MG/KG | 0.036 U | 0.048 U | 0.05 U | 0.059 U | 0.43 U | 0.049 U | 0.064 U | 0.044 U | 0.041 U | 0.041 U | 0.048 U | 0.1 U | 0.1 U | 0.039 U | 0.037 U | 0.038 U | 0.04 U | 0.046 U | 0.04 U | 0.055 U | 0.041 U |
| PEST/PCB | AROCLOR-1260 | MG/KG | 0.036 UJ | 0.048 U | 0.05 U | 0.059 U | 0.43 U | 0.049 UJ | 0.064 U | 0.044 U | 0.041 U | 0.041 U | 0.048 U | 0.1 U | 0.1 U | 0.039 U | 0.037 U | 0.038 U | 0.04 U | 0.046 U | 0.04 U | 0.055 U | 0.041 U |
| PEST/PCB | BETA-BHC | MG/KG | | | | | | | | | | | | | | | | | | 0.0024 U | 0.0021 U | 0.0028 U | 0.0021 U |
| PEST/PCB | DELTA-BHC | MG/KG | | | | | | | | | | | | | | | | | | 0.0024 U | 0.0021 U | 0.0028 U | 0.0021 U |
| PEST/PCB | DIELDRIN | MG/KG | | | | | | | | | | | | | | | | | | 0.0046 U | 0.004 U | 0.0055 U | 0.0041 U |
| PEST/PCB | ENDOSULFAN I | MG/KG | | | | | | | | | | | | | | | | | | 0.0024 U | 0.0021 U | 0.0028 U | 0.0021 U |
| PEST/PCB | ENDOSULFAN II | MG/KG | | | | | | | | | | | | | | | | | | 0.0046 U | 0.004 U | 0.0055 U | 0.0041 U |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | | | | | | | | | | | | | | | | | | 0.0046 U | 0.004 U | 0.0055 U | 0.0041 U |
| PEST/PCB | ENDRIN | MG/KG | | | | | | | | | | | | | | | | | | 0.0046 U | 0.004 U | 0.0055 U | 0.0041 U |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | 0.0046 U | 0.004 U | 0.0055 U | 0.0041 U |
| PEST/PCB | ENDRIN KETONE | MG/KG | | | | | | | | | | | | | | | | | | 0.0046 U | 0.004 U | 0.0055 U | 0.0041 U |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | | | | | | | | | | | | | | | | | | 0.0024 U | 0.0021 U | 0.0028 U | 0.0021 U |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | 0.0024 U | 0.0021 U | 0.0028 U | 0.0021 U |
| PEST/PCB | HEPTACHLOR | MG/KG | | | | | | | | | | | | | | | | | | 0.0024 U | 0.0021 U | 0.0028 U | 0.0021 U |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | | | | | | | | | | | | | | | | | | 0.0024 U | 0.0021 U | 0.0028 U | 0.0021 U |
| PEST/PCB | METHOXYCHLOR | MG/KG | | | | | | | | | | | | | | | | | | 0.024 U | 0.021 U | 0.028 U | 0.021 U |
| PEST/PCB | TOXAPHENE | MG/KG | | | | | | | | | | | | | | | | | | 0.24 U | 0.21 U | 0.28 U | 0.21 U |
| SVOC | 1,1'-BIPHENYL | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | 1.1 U | 0.98 U | 1.3 U | 1 U |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | 2,4-DINITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | 1.1 U | 0.98 U | 1.3 U | 1 U |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | 2-CHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | 2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | 2-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | 1.1 U | 0.98 U | 1.3 U | 1 U |
| SVOC | 2-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | 3-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | 1.1 U | 0.98 U | 1.3 U | 1 U |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | 1.1 U | 0.98 U | 1.3 U | 1 U |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | 4-CHLOROANILINE | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | 4-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | 0.026 J | 0.4 U | 0.55 U | 0.006 J |
| SVOC | 4-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | 1.1 U | 0.98 U | 1.3 U | 1 U |
| SVOC | 4-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | 1.1 U | 0.98 U | 1.3 U | 1 U |
| SVOC | ACENAPHTHENE | MG/KG | 0.36 U | 0.48 U | 0.49 U | 0.58 U | 0.57 U | 0.49 U | 0.63 U | 0.43 U | 0.41 U | 0.4 U | 0.47 U | 0.5 U | 0.49 U | 0.39 U | 0.37 U | 0.37 U | 0.4 U | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | ACENAPHTHYLENE | MG/KG | 0.36 U | 0.48 U | 0.49 U | 0.58 U | 0.57 U | 0.49 U | 0.63 U | 0.43 U | 0.41 U | 0.4 U | 0.47 U | 0.5 U | 0.49 U | 0.009 J | 0.37 U | 0.37 U | 0.4 U | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | ACETOPHENONE | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | ANTHRACENE | MG/KG | 0.36 U | 0.48 U | 0.49 U | 0.58 U | 0.57 U | 0.49 U | 0.63 U | 0.43 U | 0.41 U | 0.4 U | 0.47 U | 0.5 U | 0.49 U | 0.017 J | 0.37 U | 0.37 U | 0.4 U | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | ATRAZINE | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | BENZALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.14 J | 0.009 J | 0.039 J |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.01 J | 0.011 J | 0.009 J | 0.011 J | 0.022 J | 0.011 J | 0.015 J | 0.009 J | 0.019 J | 0.012 J | 0.018 J | 0.01 J | 0.024 J | 0.078 J | 0.004 J | 0.016 J | 0.02 J | 0.46 U | 0.019 J | 0.014 J | 0.004 J |
| SVOC | BENZO(A)PYRENE | MG/KG | 0.012 J | 0.01 J | 0.008 J | 0.012 J | 0.018 J | 0.009 J | 0.014 J | 0.01 J | 0.019 J | 0.012 J | 0.021 J | 0.008 J | 0.022 J | 0.046 J | 0.37 U | 0.015 J | 0.018 J | 0.46 U | 0.019 J | 0.014 J | 0.006 J |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 0.018 J | 0.016 J | 0.014 J | 0.58 U | 0.027 J | 0.011 J | 0.016 J | 0.013 J | 0.026 J | 0.015 J | 0.026 J | 0.011 J | 0.036 J | 0.2 J | 0.37 U | 0.04 J | 0.034 J | 0.46 U | 0.021 J | 0.012 J | 0.41 UJ |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCSB0424 | HCSB0425 | HCSB0426 | HCSB0428 | HCSB0435 | HCSB0446 | HCSB0458 | HCSB0465 | HCSB0466 | HCSB0466 | HCSB0472 | HCSB0477 | HCSB0480 | HCSB0482 | HCSB0483 | HCSB0484 | HCSB0485 | RSSB0023 | RSSB0023 | RSSB0024 | RSSB0024 |
| | | Field Sample ID | HCSB0424-SS-AA-AB-0 | HCSB0425-SS-AA-AB-0 | HCSB0426-SS-AA-AB-0 | HCSB0428-SS-AA-AB-0 | HCSB0435-SS-AA-AB-0 | HCSB0446-SS-AA-AB-0 | HCSB0458-SS-AA-AB-0 | HCSB0465-SS-AA-AB-0 | HCSB0466-SS-AA-AB-0 | HCSB0466-SS-AA-AB-1 | HCSB0472-SS-AA-AB-0 | HCSB0477-SS-AA-AB-0 | HCSB0480-SS-AA-AB-0 | HCSB0482-SS-AA-AB-0 | HCSB0483-SS-AA-AB-0 | HCSB0484-SS-AA-AB-0 | HCSB0485-SS-AA-AB-0 | RSSB0023-SS-AA-AB-0 | RSSB0023-SS-AD-AE-0 | RSSB0024-SS-AA-AB-0 | RSSB0024-SS-AD-AE-0 |
| | | Sample Date | 4/22/08 | 4/23/08 | 4/23/08 | 4/29/08 | 4/30/08 | 5/6/08 | 5/14/08 | 5/19/08 | 5/19/08 | 5/19/08 | 5/19/08 | 5/21/08 | 5/21/08 | 6/17/08 | 6/17/08 | 6/17/08 | 6/17/08 | 7/2/07 | 7/2/07 | 7/2/07 | 7/2/07 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 1.5-2 | 0-0.5 | 1.5-2 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.36 U | 0.48 U | 0.49 UJ | 0.58 U | 0.57 U | 0.49 U | 0.63 U | 0.43 U | 0.41 UJ | 0.4 U | 0.47 UJ | 0.5 U | 0.49 UJ | 0.008 J | 0.37 U | 0.37 U | 0.01 J | 0.46 U | 0.007 J | 0.006 J | 0.41 UJ |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.014 J | 0.014 J | 0.015 J | 0.58 U | 0.03 J | 0.012 J | 0.018 J | 0.012 J | 0.031 J | 0.018 J | 0.031 J | 0.011 J | 0.035 J | 0.18 J | 0.37 U | 0.032 J | 0.034 J | 0.46 U | 0.024 J | 0.017 J | 0.41 UJ |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | CAPROLACTAM | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | CARBAZOLE | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | CHRYSENE | MG/KG | 0.019 J | 0.02 J | 0.014 J | 0.019 J | 0.031 J | 0.016 J | 0.022 J | 0.015 J | 0.026 J | 0.019 J | 0.027 J | 0.015 J | 0.034 J | 0.13 J | 0.008 J | 0.028 J | 0.028 J | 0.46 U | 0.026 J | 0.018 J | 0.006 J |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.36 U | 0.48 U | 0.49 U | 0.58 U | 0.57 U | 0.49 U | 0.63 U | 0.43 U | 0.41 UJ | 0.4 U | 0.47 UJ | 0.5 U | 0.49 UJ | 0.011 J | 0.37 U | 0.37 U | 0.4 U | 0.46 U | 0.4 UJ | 0.55 UJ | 0.41 UJ |
| SVOC | DIBENZOFURAN | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | DIETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | DIMETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 UJ | 0.55 UJ | 0.41 UJ |
| SVOC | FLUORANTHENE | MG/KG | 0.024 J | 0.03 J | 0.021 J | 0.028 J | 0.052 J | 0.025 J | 0.035 J | 0.02 J | 0.046 J | 0.028 J | 0.05 J | 0.021 J | 0.06 J | 0.089 J | 0.01 J | 0.037 J | 0.043 J | 0.46 U | 0.027 J | 0.024 J | 0.007 J |
| SVOC | FLUORENE | MG/KG | 0.36 U | 0.48 U | 0.49 U | 0.58 U | 0.57 U | 0.49 U | 0.63 U | 0.43 U | 0.41 U | 0.4 U | 0.47 U | 0.5 U | 0.49 U | 0.39 U | 0.37 U | 0.37 U | 0.4 U | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | HEXACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | HEXACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.008 J | 0.006 J | 0.49 U | 0.58 U | 0.006 J | 0.005 J | 0.63 U | 0.43 U | 0.41 UJ | 0.005 J | 0.47 UJ | 0.5 U | 0.49 UJ | 0.024 J | 0.37 U | 0.008 J | 0.008 J | 0.46 U | 0.016 J | 0.012 J | 0.41 UJ |
| SVOC | ISOPHORONE | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | NAPHTHALENE | MG/KG | 0.36 U | 0.48 U | 0.49 U | 0.58 U | 0.57 U | 0.49 U | 0.63 U | 0.43 U | 0.41 U | 0.4 U | 0.47 U | 0.5 U | 0.49 U | 0.39 U | 0.37 U | 0.37 U | 0.4 U | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | NITROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | PENTACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | 1.1 U | 0.98 U | 1.3 U | 1 U |
| SVOC | PHENANTHRENE | MG/KG | 0.012 J | 0.016 J | 0.012 J | 0.016 J | 0.031 J | 0.015 J | 0.022 J | 0.012 J | 0.032 J | 0.018 J | 0.026 J | 0.012 J | 0.034 J | 0.014 J | 0.005 J | 0.014 J | 0.017 J | 0.46 U | 0.023 J | 0.019 J | 0.005 J |
| SVOC | PHENOL | MG/KG | | | | | | | | | | | | | | | | | | 0.46 U | 0.4 U | 0.55 U | 0.41 U |
| SVOC | PYRENE | MG/KG | 0.024 J | 0.029 J | 0.017 J | 0.031 J | 0.054 J | 0.023 J | 0.034 J | 0.022 J | 0.046 J | 0.026 J | 0.056 J | 0.024 J | 0.059 J | 0.12 J | 0.009 J | 0.037 J | 0.048 J | 0.46 U | 0.064 J | 0.047 J | 0.015 J |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | 1,1-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | 1,1-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 UJ | | 0.011 UJ |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | 1,2-DIBROMOETHANE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | 1,2-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | 2-HEXANONE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | ACETONE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | BENZENE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | BROMODICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | BROMOFORM | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | BROMOMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | CARBON DISULFIDE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | CARBON TETRACHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | CHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | CHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 UJ | | 0.011 UJ |
| VOC | CHLOROFORM | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | CHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | CYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | DICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | ETHYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | ISOPROPYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | METHYL ACETATE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 UJ | | 0.011 UJ |
| VOC | METHYL ETHYL KETONE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | METHYLCYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | STYRENE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | TETRACHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | TOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | VINYL CHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |
| VOC | XYLENES (TOTAL) | MG/KG | | | | | | | | | | | | | | | | | | | 0.012 U | | 0.011 U |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | KWL | KWL | KWL | KWL | KWL | KWL | KWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | RSSB0025 | RSSB0025 | RSSB0026 | RSSB0026 | RSSB0027 | RSSB0027 | RSSB0028 | RSSB0028 | RSSB0029 | RSSB0029 | RSSB0030 | RSSB0030 | RSSB0077 | RSSB0077 | HCSB0199 | HCSB0200 | KWSB0001 | KWSB0002 | KWSB0003 | KWSB0004 | KWSB0005 |
| | | Field Sample ID | RSSB0025-SS-AA-AB-0 | RSSB0025-SS-AD-AE-0 | RSSB0026-SS-AA-AB-0 | RSSB0026-SS-AD-AE-0 | RSSB0027-SS-AA-AB-0 | RSSB0027-SS-AD-AE-0 | RSSB0028-SS-AA-AB-0 | RSSB0028-SS-AD-AE-0 | RSSB0029-SS-AA-AB-0 | RSSB0029-SS-AD-AE-0 | RSSB0030-SS-AA-AB-0 | RSSB0030-SS-AD-AE-0 | RSSB0077-SS-AA-AB-0 | RSSB0077-SS-AD-AE-0 | HCSB0199-SS-AA-AE-0 | HCSB0200-SS-AA-AE-0 | KWSB0001-SS-AA-AB-0 | KWSB0002-SS-AA-AB-0 | KWSB0003-SS-AA-AB-0 | KWSB0004-SS-AA-AB-0 | KWSB0005-SS-AA-AB-0 |
| | | Sample Date | 7/2/07 | 7/2/07 | 7/2/07 | 7/2/07 | 7/2/07 | 7/2/07 | 7/2/07 | 7/2/07 | 7/2/07 | 7/2/07 | 7/2/07 | 7/2/07 | 7/16/07 | 7/16/07 | 7/27/05 | 7/27/05 | 11/5/07 | 11/5/07 | 11/5/07 | 11/5/07 | 11/5/07 |
| | | Depth (ft) | 0-0.5 | 1.5-2 | 0-0.5 | 1.5-2 | 0-0.5 | 1.5-2 | 0-0.5 | 1.5-2 | 0-0.5 | 1.5-2 | 0-0.5 | 1.5-2 | 0-0.5 | 1.5-2 | 0-2 | 0-2 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 569 | 2790 | 3060 J | 1660 | 579 | 5170 | 1540 | 3560 | 4730 J | 749 | 15900 J | 4710 | 1270 | 4070 J | 3380 | 2400 | 4760 | 825 | 603 | 8990 J | 1410 |
| METALS | ANTIMONY | MG/KG | 0.97 UJ | 1 UJ | 2.5 J | 1 UJ | 1 UJ | 1 UJ | 1.1 UJ | 1.1 UJ | 3.2 UJ | 1 UJ | 7.1 UJ | 1.1 UJ | 3.5 J | 6.8 J | 0.44 UJ | 0.44 UJ | 1 UJ | 0.72 UJ | 0.78 J | 29 J | 1.3 J |
| METALS | ARSENIC | MG/KG | 2.5 | 0.9 J | 6.4 J | 10.7 | 1.6 J | 1.5 J | 2.1 J | 1.7 J | 15 J | 1.1 J | 6.1 UJ | 0.94 U | 12.1 | 446 J | 1.4 J | 0.68 J | 3.4 | 0.67 U | 1 J | 2.8 UJ | 11.5 |
| METALS | BARIUM | MG/KG | 3.8 J | 9.3 J | 24.5 J | 5.7 J | 16.7 J | 5.4 J | 16.1 J | 8.4 J | 84.5 J | 3.2 J | 22.1 J | 15.6 J | 1200 | 789 J | 24.6 J | 4.2 J | 18.2 J | 3.5 J | 2.9 J | 220 J | 44.7 J |
| METALS | BERYLLIUM | MG/KG | 0.05 J | 0.05 J | 0.11 J | 0.03 J | 0.03 J | 0.06 J | 0.07 J | 0.08 J | 0.15 J | 0.04 J | 0.32 J | 0.09 J | 0.15 J | 0.3 J | 0.28 J | 0.17 J | 0.23 J | 0.04 U | 0.05 U | 0.18 UJ | 0.07 U |
| METALS | CADMIUM | MG/KG | 0.07 U | 0.07 U | 0.15 UJ | 0.07 U | 0.07 U | 0.07 U | 0.08 U | 0.08 U | 0.23 UJ | 0.07 U | 0.51 UJ | 0.28 J | 1.7 | 4 J | 0.044 U | 0.044 U | 0.13 J | 0.09 U | 0.09 U | 1.6 J | 0.13 U |
| METALS | CALCIUM | MG/KG | 51.7 J | 36.2 J | 184 J | 37.5 J | 309 J | 54.7 J | 84.4 J | 31.7 J | 510 J | 41.4 J | 712 J | 877 J | 1380 J | 2540 J | 1350 | 153 J | 1070 J | 27.2 J | 31.4 J | 1580 J | 1880 |
| METALS | CHROMIUM | MG/KG | 1 J | 7 | 6.6 J | 7.2 | 1.8 J | 6.9 | 3.3 | 12.2 | 14.9 J | 2.1 J | 43.7 J | 35.3 | 64.5 | 477 J | 15.2 | 5.7 | 13.3 J | 2.4 | 2.1 J | 24 J | 7.7 J |
| METALS | COBALT | MG/KG | 0.23 U | 0.25 U | 0.5 UJ | 0.25 U | 0.25 U | 0.25 U | 0.27 U | 0.25 U | 0.77 UJ | 0.24 U | 1.7 UJ | 0.26 U | 0.98 J | 4.8 J | 1 J | 0.36 J | 0.69 U | 0.5 U | 0.52 U | 2.1 UJ | 0.75 U |
| METALS | COPPER | MG/KG | 2.6 J | 1.7 J | 14.5 J | 1.3 J | 4.5 J | 1 J | 3.5 J | 0.66 U | 20.5 J | 0.77 J | 26.6 J | 1.3 J | 46.1 | 394 J | 6.8 | 2.3 J | 3.3 J | 1.2 J | 2.4 J | 23.3 J | 56.4 |
| METALS | CYANIDE | MG/KG | 0.1 U | 0.11 U | 0.22 UJ | 0.11 U | 0.11 U | 0.11 U | 0.12 U | 0.11 U | 0.34 UJ | 0.11 U | 0.73 UJ | 0.11 U | 12.5 | 13.7 J | 0.17 J | 0.15 J | 0.14 J | 0.03 U | 0.03 U | 2.7 J | 0.05 U |
| METALS | IRON | MG/KG | 642 | 1350 | 3670 J | 7860 | 683 | 2820 | 855 | 381 | 12600 J | 618 | 5650 J | 586 | 4960 | 19400 J | 6710 | 4180 | 15300 | 1400 | 1050 | 1450 J | 3610 |
| METALS | LEAD | MG/KG | 15.3 | 3.6 | 101 J | 3.8 | 29.1 | 7 | 63.6 | 4.3 | 123 J | 2.4 J | 193 J | 6.2 | 356 | 7540 J | 21.9 | 6.7 | 47.1 | 17 | 123 | 487 J | 162 |
| METALS | MAGNESIUM | MG/KG | 26 J | 100 J | 139 J | 48.2 J | 95.4 J | 37.7 J | 69.6 J | 130 J | 194 J | 22.1 J | 198 J | 189 J | 275 J | 197 J | 605 J | 86.8 J | 102 J | 31.3 J | 27.3 J | 219 J | 59.5 J |
| METALS | MANGANESE | MG/KG | 3.1 J | 3.8 | 10.1 J | 2.8 J | 14.2 | 2.1 J | 5.2 | 5.8 | 10.6 J | 1.1 J | 7.6 J | 6 | 22.7 | 54.1 J | 22 | 5.6 | 17 | 3.8 | 3.5 | 11.1 J | 3.5 J |
| METALS | MERCURY | MG/KG | 0.06 U | 0.05 U | 0.16 J | 0.06 U | 0.06 U | 0.05 U | 0.06 U | 0.07 J | 0.23 J | 0.06 U | 0.37 UJ | 0.08 J | 0.18 | 0.83 J | 0.012 U | 0.025 J | 0.08 U | 0.05 U | 0.06 U | 0.2 J | 0.08 U |
| METALS | NICKEL | MG/KG | 0.44 J | 0.3 U | 3.8 J | 0.29 U | 1.2 J | 0.86 J | 0.84 J | 0.54 J | 3.9 J | 0.29 U | 5.5 J | 0.94 J | 3.3 J | 17 J | 2.6 J | 1.1 J | 2.5 J | 0.4 J | 0.48 J | 4.1 J | 1.7 J |
| METALS | POTASSIUM | MG/KG | 20.9 U | 223 J | 137 J | 136 J | 38 J | 22.5 U | 38.3 J | 208 J | 204 J | 22.1 U | 153 UJ | 411 J | 27.7 U | 37 UJ | 699 J | 128 J | 143 J | 68.5 J | 71.7 J | 378 J | 120 J |
| METALS | SELENIUM | MG/KG | 1.1 U | 1.2 U | 2.4 UJ | 1.2 U | 1.2 U | 1.2 U | 1.3 U | 1.3 | 3.6 UJ | 1.2 U | 7.9 UJ | 1.2 U | 1.4 U | 1.9 UJ | 0.74 J | 0.4 UJ | 1.4 UJ | 0.98 UJ | 1 U | 4.1 UJ | 1.5 U |
| METALS | SILVER | MG/KG | 0.23 U | 0.25 U | 0.5 UJ | 0.25 U | 0.25 U | 0.25 U | 0.27 U | 0.25 U | 0.77 UJ | 0.24 U | 1.7 UJ | 0.26 U | 0.37 J | 0.97 J | 0.053 U | 0.052 U | 0.27 U | 0.2 U | 0.2 U | 0.81 UJ | 0.29 U |
| METALS | SODIUM | MG/KG | 102 J | 80.9 J | 220 J | 71.9 J | 100 J | 106 J | 102 J | 111 J | 409 J | 132 J | 798 J | 107 J | 49.2 U | 65.8 UJ | 86.4 J | 18.3 U | 178 J | 109 J | 107 J | 588 J | 238 J |
| METALS | THALLIUM | MG/KG | 1.1 U | 1.2 U | 2.5 UJ | 1.2 U | 1.2 U | 1.2 U | 1.3 U | 1.2 U | 3.8 UJ | 1.2 U | 8.3 UJ | 1.3 U | 1.5 U | 2.1 J | 0.44 J | 0.31 U | 1.5 UJ | 1.1 UJ | 1.2 UJ | 4.6 UJ | 1.7 UJ |
| METALS | VANADIUM | MG/KG | 2.3 J | 4.7 J | 11.1 J | 26.1 J | 5.4 J | 9.5 J | 5.7 J | 4.8 J | 21.7 J | 2.8 J | 16.4 J | 7.9 J | 8 J | 19.1 J | 11.7 | 9.8 J | 11.9 J | 3.7 J | 5.2 J | 11 J | 6.9 J |
| METALS | ZINC | MG/KG | 15 | 1.5 J | 18.9 J | 1.2 J | 20.8 | 3 J | 6.5 | 2.7 J | 19.6 J | 0.86 U | 12.2 J | 1.8 J | 510 | 2010 J | 20.8 | 7.1 | 25.2 J | 1.6 J | 2.3 J | 161 J | 30.1 J |
| PEST/PCB | 4,4'-DDD | MG/KG | 0.004 U | 0.0042 U | 0.0087 UJ | 0.0042 U | 0.0042 U | 0.0042 U | 0.0045 U | 0.0043 U | 0.013 UJ | 0.0041 U | 0.028 UJ | 0.0044 U | 0.02 J | 0.0071 UJ | R | 0.0034 UJ | | | | | |
| PEST/PCB | 4,4'-DDE | MG/KG | 0.004 U | 0.0042 U | 0.0087 UJ | 0.0042 U | 0.0049 | 0.0042 U | 0.0045 U | 0.0043 U | 0.013 UJ | 0.0041 U | 0.028 UJ | 0.0044 U | 0.01 | 0.0071 UJ | 0.1 J | 0.015 J | | | | | |
| PEST/PCB | 4,4'-DDT | MG/KG | 0.004 U | 0.0042 U | 0.011 J | 0.0042 U | 0.0061 | 0.0042 U | 0.0045 U | 0.0043 U | 0.013 UJ | 0.0041 U | 0.028 UJ | 0.0044 U | 0.0078 J | 0.0071 UJ | 0.053 J | 0.018 J | | | | | |
| PEST/PCB | ALDRIN | MG/KG | 0.0021 U | 0.0022 U | 0.0045 UJ | 0.0022 U | 0.0022 U | 0.0022 U | 0.0023 U | 0.0022 U | 0.0068 UJ | 0.0021 U | 0.015 UJ | 0.0023 U | 0.0026 U | 0.0036 UJ | 0.0018 UJ | 0.0018 UJ | | | | | |
| PEST/PCB | ALPHA-BHC | MG/KG | 0.0021 U | 0.0022 U | 0.0045 UJ | 0.0022 U | 0.0022 U | 0.0022 U | 0.0023 U | 0.0022 U | 0.0068 UJ | 0.0021 U | 0.015 UJ | 0.0023 U | 0.0026 U | 0.0036 UJ | 0.0018 UJ | 0.0018 UJ | | | | | |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | 0.0021 U | 0.0022 U | 0.0045 UJ | 0.0022 U | 0.0022 U | 0.0022 U | 0.0023 U | 0.0022 U | 0.0068 UJ | 0.0021 U | 0.015 UJ | 0.0023 U | R | 0.0036 UJ | 0.0018 UJ | 0.0018 UJ | | | | | |
| PEST/PCB | AROCLOR-1016 | MG/KG | 0.04 U | 0.042 U | 0.087 UJ | 0.042 U | 0.042 U | 0.042 U | 0.045 U | 0.043 U | 0.13 UJ | 0.041 U | 0.28 UJ | 0.044 U | 0.052 U | 0.071 UJ | 0.035 UJ | 0.034 UJ | | | | | |
| PEST/PCB | AROCLOR-1221 | MG/KG | 0.082 U | 0.085 U | 0.18 UJ | 0.086 U | 0.086 U | 0.086 U | 0.091 U | 0.088 U | 0.27 UJ | 0.084 U | 0.58 UJ | 0.089 U | 0.1 U | 0.14 UJ | 0.071 UJ | 0.07 UJ | | | | | |
| PEST/PCB | AROCLOR-1232 | MG/KG | 0.04 U | 0.042 U | 0.087 UJ | 0.042 U | 0.042 U | 0.042 U | 0.045 U | 0.043 U | 0.13 UJ | 0.041 U | 0.28 UJ | 0.044 U | 0.052 U | 0.071 UJ | 0.035 UJ | 0.034 UJ | | | | | |
| PEST/PCB | AROCLOR-1242 | MG/KG | 0.04 U | 0.042 U | 0.087 UJ | 0.042 U | 0.042 U | 0.042 U | 0.045 U | 0.043 U | 0.13 UJ | 0.041 U | 0.28 UJ | 0.044 U | 0.052 U | 0.071 UJ | 0.035 UJ | 0.034 UJ | | | | | |
| PEST/PCB | AROCLOR-1248 | MG/KG | 0.04 U | 0.042 U | 0.087 UJ | 0.042 U | 0.042 U | 0.042 U | 0.045 U | 0.043 U | 0.13 UJ | 0.041 U | 0.28 UJ | 0.044 U | 0.052 U | 0.071 UJ | 0.035 UJ | 0.034 UJ | | | | | |
| PEST/PCB | AROCLOR-1254 | MG/KG | 0.04 U | 0.042 U | 0.087 UJ | 0.042 U | 0.042 U | 0.042 U | 0.045 U | 0.043 U | 0.13 UJ | 0.041 U | 0.28 UJ | 0.044 U | 0.052 U | 0.071 UJ | 0.035 UJ | 0.034 UJ | | | | | |
| PEST/PCB | AROCLOR-1260 | MG/KG | 0.04 U | 0.042 U | 0.087 UJ | 0.042 U | 0.042 U | 0.042 U | 0.045 U | 0.043 U | 0.13 UJ | 0.041 U | 0.28 UJ | 0.044 U | 0.052 U | 0.071 UJ | 0.035 UJ | 0.034 UJ | | | | | |
| PEST/PCB | BETA-BHC | MG/KG | 0.0021 U | 0.0022 U | 0.0045 UJ | 0.0022 U | 0.0022 U | 0.0022 U | 0.0023 U | 0.0022 U | 0.0068 UJ | 0.0021 U | 0.015 UJ | 0.0023 U | 0.0026 U | 0.0036 UJ | 0.0018 UJ | 0.0018 UJ | | | | | |
| PEST/PCB | DELTA-BHC | MG/KG | 0.0021 U | 0.0022 U | 0.0045 UJ | 0.0022 U | 0.0022 U | 0.0022 U | 0.0023 U | 0.0022 U | 0.0068 UJ | 0.0021 U | 0.015 UJ | 0.0023 U | 0.0026 U | 0.0036 UJ | 0.0018 UJ | 0.0018 UJ | | | | | |
| PEST/PCB | DIELDRIN | MG/KG | 0.004 U | 0.0042 U | 0.0087 UJ | 0.0042 U | 0.0042 U | 0.0042 U | 0.0045 U | 0.0043 U | 0.013 UJ | 0.0041 U | 0.028 UJ | 0.0044 U | R | 0.0071 UJ | 0.0035 UJ | 0.0034 UJ | | | | | |
| PEST/PCB | ENDOSULFAN I | MG/KG | 0.0021 U | 0.0022 U | 0.0045 UJ | 0.0022 U | 0.0022 U | 0.0022 U | 0.0023 U | 0.0022 U | 0.0068 UJ | 0.0021 U | 0.015 UJ | 0.0023 U | 0.0026 U | 0.0036 UJ | 0.0018 UJ | 0.0018 UJ | | | | | |
| PEST/PCB | ENDOSULFAN II | MG/KG | 0.004 U | 0.0042 U | 0.0087 UJ | 0.0042 U | 0.0042 U | 0.0042 U | 0.0045 U | 0.0043 U | 0.013 UJ | 0.0041 U | 0.028 UJ | 0.0044 U | 0.0052 U | 0.0071 UJ | 0.0035 UJ | 0.0034 UJ | | | | | |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | 0.004 U | 0.0042 U | 0.0087 UJ | 0.0042 U | 0.0042 U | 0.0042 U | 0.0045 U | 0.0043 U | 0.013 UJ | 0.0041 U | 0.028 UJ | 0.0044 U | 0.0052 U | 0.0071 UJ | 0.0035 UJ | 0.0034 UJ | | | | | |
| PEST/PCB | ENDRIN | MG/KG | 0.004 U | 0.0042 U | 0.0087 UJ | 0.0042 U | 0.0042 U | 0.0042 U | 0.0045 U | 0.0043 U | 0.013 UJ | 0.0041 U | 0.028 UJ | 0.0044 U | 0.0052 U | 0.0071 UJ | 0.0035 UJ | 0.0034 UJ | | | | | |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | 0.004 U | 0.0042 U | 0.0087 UJ | 0.0042 U | 0.0042 U | 0.0042 U | 0.0045 U | 0.0043 U | 0.013 UJ | 0.0041 U | 0.028 UJ | 0.0044 U | 0.0052 U | 0.0071 UJ | 0.0035 UJ | 0.0034 UJ | | | | | |
| PEST/PCB | ENDRIN KETONE | MG/KG | 0.004 U | 0.0042 U | 0.0087 UJ | 0.0042 U | 0.0042 U | 0.0042 U | 0.0045 U | 0.0043 U | 0.013 UJ | 0.0041 U | 0.028 UJ | 0.0044 U | 0.0052 U | 0.0071 UJ | 0.0035 UJ | 0.0034 UJ | | | | | |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | 0.0021 U | 0.0022 U | 0.0045 UJ | 0.0022 U | 0.0022 U | 0.0022 U | 0.0023 U | 0.0022 U | 0.0068 UJ | 0.0021 U | 0.015 UJ | 0.0023 U | 0.0026 U | 0.0036 UJ | 0.0018 UJ | 0.0018 UJ | | | | | |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | 0.0021 U | 0.0022 U | 0.0045 UJ | 0.0022 U | 0.0022 U | 0.0022 U | 0.0023 U | 0.0022 U | 0.0068 UJ | 0.0021 U | 0.015 UJ | 0.0023 U | 0.0026 U | 0.0036 UJ | 0.0018 UJ | 0.0018 UJ | | | | | |
| PEST/PCB | HEPTACHLOR | MG/KG | 0.0021 U | 0.0022 U | 0.0045 UJ | 0.0022 U | 0.0022 U | 0.0022 U | 0.0023 U | 0.0022 U | 0.0068 UJ | 0.0021 U | 0.015 UJ | 0.0023 U | 0.0026 U | 0.0036 UJ | 0.0018 UJ | 0.0018 UJ | | | | | |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | 0.0021 U | 0.0022 U | 0.0045 UJ | 0.0022 U | 0.0022 U | 0.0022 U | 0.0023 U | 0.0022 U | 0.0068 UJ | 0.0021 U | 0.015 UJ | 0.0023 U | 0.0026 U | 0.0036 UJ | 0.0018 UJ | 0.0018 UJ | | | | | |
| PEST/PCB | METHOXYCHLOR | MG/KG | 0.021 U | 0.022 U | 0.045 UJ | 0.022 U | 0.022 U | 0.022 U | 0.023 U | 0.022 U | 0.068 UJ | 0.021 U | 0.15 UJ | 0.023 U | 0.026 U | 0.036 UJ | 0.018 UJ | 0.018 UJ | | | | | |
| PEST/PCB | TOXAPHENE | MG/KG | 0.21 U | 0.22 U | 0.45 UJ | 0.22 U | 0.22 U | 0.22 U | 0.23 U | 0.22 U | 0.68 UJ | 0.21 U | 1.5 UJ | 0.23 U | 0.26 U | 0.36 UJ | 0.18 UJ | 0.18 UJ | | | | | |
| SVOC | 1,1'-BIPHENYL | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | 0.98 U | 1 U | 2.1 UJ | 1 U | 1 U | 1 U | 1.1 U | 1 U | 3.2 UJ | 1 U | 6.9 UJ | 1.1 U | 1.2 U | 1.7 UJ | 0.88 UJ | 0.86 UJ | | | | | |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | 2,4-DINITROPHENOL | MG/KG | 0.98 U | 1 U | 2.1 UJ | 1 U | 1 UJ | 1 U | 1.1 UJ | 1 U | 3.2 UJ | 1 U | 6.9 UJ | 1.1 U | 1.2 U | 1.7 UJ | 0.88 UJ | 0.86 UJ | | | | | |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | 2-CHLOROPHENOL | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.012 J | 0.016 J | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | 2-METHYLPHENOL | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | 2-NITROANILINE | MG/KG | 0.98 U | 1 U | 2.1 UJ | 1 U | 1 U | 1 U | 1.1 U | 1 U | 3.2 UJ | 1 U | 6.9 UJ | 1.1 U | 1.2 U | 1.7 UJ | 0.88 UJ | 0.86 UJ | | | | | |
| SVOC | 2-NITROPHENOL | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | 3-NITROANILINE | MG/KG | 0.98 U | 1 U | 2.1 UJ | 1 U | 1 U | 1 U | 1.1 U | 1 U | 3.2 UJ | 1 U | 6.9 UJ | 1.1 U | 1.2 U | 1.7 UJ | 0.88 UJ | 0.86 UJ | | | | | |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | 0.98 U | 1 U | 2.1 UJ | 1 U | 1 U | 1 U | 1.1 U | 1 U | 3.2 UJ | 1 U | 6.9 UJ | 1.1 U | 1.2 U | 1.7 UJ | 0.88 UJ | 0.86 UJ | | | | | |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | 4-CHLOROANILINE | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | 4-METHYLPHENOL | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.008 J | 0.031 J | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | 4-NITROANILINE | MG/KG | 0.98 U | 1 U | 2.1 UJ | 1 U | 1 U | 1 U | 1.1 U | 1 U | 3.2 UJ | 1 U | 6.9 UJ | 1.1 U | 1.2 U | 1.7 UJ | 0.88 UJ | 0.86 UJ | | | | | |
| SVOC | 4-NITROPHENOL | MG/KG | 0.98 U | 0.007 J | 2.1 UJ | 0.006 J | 1 U | 1 U | 1.1 U | 1 U | 3.2 UJ | 1 U | 6.9 UJ | 1.1 U | 1.2 U | 1.7 UJ | 0.88 UJ | 0.86 UJ | | | | | |
| SVOC | ACENAPHTHENE | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.038 J | 0.016 J | 0.35 UJ | 0.34 UJ | 0.5 U | 0.36 U | 0.38 U | 1.5 UJ | 0.55 U |
| SVOC | ACENAPHTHYLENE | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.017 J | 0.011 J | 0.055 J | 0.34 UJ | 0.5 U | 0.36 U | 0.38 U | 0.042 J | 0.55 U |
| SVOC | ACETOPHENONE | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | ANTHRACENE | MG/KG | 0.4 U | 0.42 U | 0.012 J | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.082 J | 0.025 J | 0.076 J | 0.34 UJ | 0.5 U | 0.36 U | 0.38 U | 0.04 J | 0.55 U |
| SVOC | ATRAZINE | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | BENZALDEHYDE | MG/KG | 0.008 J | 0.42 U | 0.046 J | 0.004 J | 0.013 J | 0.007 J | 0.026 J | 0.43 U | 0.033 J | 0.005 J | 0.065 J | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.008 J | 0.42 U | 0.08 J | 0.42 U | 0.023 J | 0.42 U | 0.009 J | 0.43 U | 0.057 J | 0.41 U | 0.076 J | 0.44 U | 0.5 J | 0.12 J | 0.11 J | 0.037 J | 0.5 U | 0.005 J | 0.007 J | 0.051 J | 0.55 U |
| SVOC | BENZO(A)PYRENE | MG/KG | 0.01 J | 0.42 U | 0.088 J | 0.42 U | 0.022 J | 0.42 U | 0.45 UJ | 0.43 UJ | 0.059 J | 0.41 UJ | 0.092 J | 0.44 U | 0.44 J | 0.11 J | 0.15 J | 0.34 UJ | 0.5 U | 0.005 J | 0.007 J | 0.056 J | 0.55 U |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 0.009 J | 0.42 U | 0.1 J | 0.42 U | 0.03 J | 0.42 U | 0.45 UJ | 0.43 UJ | 0.058 J | 0.41 UJ | 0.11 J | 0.44 U | 0.75 | 0.17 J | 0.18 J | 0.052 J | 0.5 U | 0.006 J | 0.009 J | 0.12 J | 0.006 J |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | KWL | KWL | KWL | KWL | KWL | KWL | KWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | RSSB0025 | RSSB0025 | RSSB0026 | RSSB0026 | RSSB0027 | RSSB0027 | RSSB0028 | RSSB0028 | RSSB0029 | RSSB0029 | RSSB0030 | RSSB0030 | RSSB0077 | RSSB0077 | HCSB0199 | HCSB0200 | KWSB0001 | KWSB0002 | KWSB0003 | KWSB0004 | KWSB0005 |
| | | Field Sample ID | RSSB0025-SS-AA-AB-0 | RSSB0025-SS-AD-AE-0 | RSSB0026-SS-AA-AB-0 | RSSB0026-SS-AD-AE-0 | RSSB0027-SS-AA-AB-0 | RSSB0027-SS-AD-AE-0 | RSSB0028-SS-AA-AB-0 | RSSB0028-SS-AD-AE-0 | RSSB0029-SS-AA-AB-0 | RSSB0029-SS-AD-AE-0 | RSSB0030-SS-AA-AB-0 | RSSB0030-SS-AD-AE-0 | RSSB0077-SS-AA-AB-0 | RSSB0077-SS-AD-AE-0 | HCSB0199-SS-AA-AE-0 | HCSB0200-SS-AA-AE-0 | KWSB0001-SS-AA-AB-0 | KWSB0002-SS-AA-AB-0 | KWSB0003-SS-AA-AB-0 | KWSB0004-SS-AA-AB-0 | KWSB0005-SS-AA-AB-0 |
| | | Sample Date | 7/2/07 | 7/2/07 | 7/2/07 | 7/2/07 | 7/2/07 | 7/2/07 | 7/2/07 | 7/2/07 | 7/2/07 | 7/2/07 | 7/2/07 | 7/2/07 | 7/16/07 | 7/16/07 | 7/27/05 | 7/27/05 | 11/5/07 | 11/5/07 | 11/5/07 | 11/5/07 | 11/5/07 |
| | | Depth (ft) | 0-0.5 | 1.5-2 | 0-0.5 | 1.5-2 | 0-0.5 | 1.5-2 | 0-0.5 | 1.5-2 | 0-0.5 | 1.5-2 | 0-0.5 | 1.5-2 | 0-0.5 | 1.5-2 | 0-2 | 0-2 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.4 UJ | 0.42 U | 0.038 J | 0.42 U | 0.011 J | 0.42 U | 0.45 UJ | 0.43 UJ | 0.041 J | 0.41 UJ | 0.031 J | 0.44 U | 0.065 J | 0.036 J | 0.17 J | 0.34 UJ | 0.5 U | 0.36 U | 0.38 U | 1.5 UJ | 0.55 U |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.01 J | 0.42 U | 0.1 J | 0.42 U | 0.026 J | 0.42 U | 0.45 UJ | 0.43 UJ | 0.068 J | 0.41 UJ | 0.11 J | 0.44 U | 0.71 | 0.16 J | 0.047 J | 0.34 UJ | 0.5 U | 0.007 J | 0.011 J | 0.096 J | 0.008 J |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | 0.4 U | 0.42 U | 0.11 J | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.062 J | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | CAPROLACTAM | MG/KG | 0.006 J | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | CARBAZOLE | MG/KG | 0.4 U | 0.42 U | 0.014 J | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.066 J | 0.019 J | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | CHRYSENE | MG/KG | 0.012 J | 0.42 U | 0.11 J | 0.42 U | 0.03 J | 0.42 U | 0.013 J | 0.43 U | 0.081 J | 0.41 U | 0.1 J | 0.44 U | 0.65 | 0.17 J | 0.14 J | 0.04 J | 0.5 U | 0.008 J | 0.01 J | 0.084 J | 0.006 J |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.4 UJ | 0.42 U | 0.87 UJ | 0.42 U | 0.42 UJ | 0.42 U | 0.45 UJ | 0.43 UJ | 0.03 J | 0.41 UJ | 2.8 UJ | 0.44 U | 0.13 J | 0.71 UJ | 0.044 J | 0.34 UJ | 0.5 U | 0.36 U | 0.38 U | 1.5 UJ | 0.55 U |
| SVOC | DIBENZOFURAN | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.022 J | 0.02 J | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | DIETHYLPHTHALATE | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | DIMETHYLPHTHALATE | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.41 J | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | 0.4 UJ | 0.42 U | 0.87 UJ | 0.42 U | 0.42 UJ | 0.42 U | 0.45 UJ | 0.43 UJ | 1.3 UJ | 0.41 UJ | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | FLUORANTHENE | MG/KG | 0.012 J | 0.42 U | 0.14 J | 0.42 U | 0.034 J | 0.42 U | 0.013 J | 0.43 U | 0.086 J | 0.41 U | 0.16 J | 0.44 U | 1.2 | 0.24 J | 0.19 J | 0.066 J | 0.006 J | 0.012 J | 0.018 J | 0.11 J | 0.009 J |
| SVOC | FLUORENE | MG/KG | 0.4 U | 0.42 U | 0.011 J | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.047 J | 0.023 J | 0.35 UJ | 0.34 UJ | 0.5 U | 0.36 U | 0.38 U | 1.5 UJ | 0.55 U |
| SVOC | HEXACHLOROBENZENE | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | HEXACHLOROETHANE | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.008 J | 0.42 U | 0.072 J | 0.42 U | 0.02 J | 0.42 U | 0.45 UJ | 0.43 UJ | 0.062 J | 0.41 UJ | 0.049 J | 0.44 U | 0.28 J | 0.11 J | 0.14 J | 0.34 UJ | 0.5 U | 0.36 U | 0.38 U | 0.025 J | 0.55 U |
| SVOC | ISOPHORONE | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | NAPHTHALENE | MG/KG | 0.4 U | 0.42 U | 0.009 J | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.017 J | 0.038 J | 0.35 UJ | 0.34 UJ | 0.5 U | 0.36 U | 0.38 U | 1.5 UJ | 0.55 U |
| SVOC | NITROBENZENE | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | PENTACHLOROPHENOL | MG/KG | 0.98 U | 1 U | 2.1 UJ | 1 U | 1 U | 1 U | 1.1 U | 1 U | 3.2 UJ | 1 U | 6.9 UJ | 1.1 U | 1.2 U | 1.7 UJ | 0.88 UJ | 0.86 UJ | | | | | |
| SVOC | PHENANTHRENE | MG/KG | 0.01 J | 0.42 U | 0.1 J | 0.42 U | 0.027 J | 0.42 U | 0.01 J | 0.43 U | 0.071 J | 0.41 U | 0.092 J | 0.44 U | 0.5 J | 0.13 J | 0.095 J | 0.34 UJ | 0.5 U | 0.006 J | 0.01 J | 0.055 J | 0.55 U |
| SVOC | PHENOL | MG/KG | 0.4 U | 0.42 U | 0.87 UJ | 0.42 U | 0.42 U | 0.42 U | 0.45 U | 0.43 U | 1.3 UJ | 0.41 U | 2.8 UJ | 0.44 U | 0.52 U | 0.71 UJ | 0.35 UJ | 0.34 UJ | | | | | |
| SVOC | PYRENE | MG/KG | 0.026 J | 0.42 U | 0.29 J | 0.42 U | 0.076 J | 0.006 J | 0.027 J | 0.43 U | 0.22 J | 0.007 J | 0.2 J | 0.44 U | 1.1 | 0.37 J | 0.17 J | 0.047 J | 0.009 J | 0.009 J | 0.01 J | 0.074 J | 0.006 J |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 UJ | 0.0085 UJ | | | | | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | 1,1-DICHLOROETHANE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | 1,1-DICHLOROETHENE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | | 0.013 UJ | | 0.014 UJ | | 0.014 UJ | | 0.014 UJ | | 0.012 UJ | | 0.012 UJ | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | R | R | | | | | |
| VOC | 1,2-DIBROMOETHANE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | 1,2-DICHLOROETHANE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | 2-HEXANONE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | ACETONE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.067 J | 0.01 U | 0.0085 U | | | | | |
| VOC | BENZENE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | BROMOFORM | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 UJ | 0.0085 UJ | | | | | |
| VOC | BROMOMETHANE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | CARBON DISULFIDE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.003 J | 0.01 U | 0.0085 U | | | | | |
| VOC | CARBON TETRACHLORIDE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | CHLOROBENZENE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | CHLOROETHANE | MG/KG | | 0.013 UJ | | 0.014 UJ | | 0.014 UJ | | 0.014 UJ | | 0.012 UJ | | 0.012 UJ | | R | 0.01 U | 0.0085 U | | | | | |
| VOC | CHLOROFORM | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | CHLOROMETHANE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | CYCLOHEXANE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | DICHLOROMETHANE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | ETHYLBENZENE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | ISOPROPYLBENZENE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | METHYL ACETATE | MG/KG | | 0.013 UJ | | 0.014 UJ | | 0.014 UJ | | 0.014 UJ | | 0.012 UJ | | 0.012 UJ | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | METHYL ETHYL KETONE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.024 J | 0.01 U | 0.0085 U | | | | | |
| VOC | METHYLCYCLOHEXANE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | STYRENE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | TETRACHLOROETHENE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | TOLUENE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | VINYL CHLORIDE | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | | 0.013 U | | 0.014 U | | 0.014 U | | 0.014 U | | 0.012 U | | 0.012 U | | 0.025 UJ | 0.01 U | 0.0085 U | | | | | |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | KWSB0006 | KWSB0007 | KWSB0008 | KWSB0009 | KWSB0010 | KWSB0010 | KWSB0011 | KWSB0012 | KWSB0013 | KWSB0014 | KWSB0015 | KWSB0024 | KWSB0025 | KWSB0026 | KWSB0027 | KWSB0028 | KWSB0028 | KWSB0029 | KWSB0030 | KWSB0031 | KWSB0032 |
| | | Field Sample ID | KWSB0006-SS-AA-AB-0 | KWSB0007-SS-AA-AB-0 | KWSB0008-SS-AA-AB-0 | KWSB0009-SS-AA-AB-0 | KWSB0010-SS-AA-AB-0 | KWSB0010-SS-AA-AB-1 | KWSB0011-SS-AA-AB-0 | KWSB0012-SS-AA-AB-0 | KWSB0013-SS-AA-AB-0 | KWSB0014-SS-AA-AB-0 | KWSB0015-SS-AA-AB-0 | KWSB0024-SS-AA-AB-0 | KWSB0025-SS-AA-AB-0 | KWSB0026-SS-AA-AB-0 | KWSB0027-SS-AA-AB-0 | KWSB0028-SS-AA-AB-0 | KWSB0028-SS-AA-AB-1 | KWSB0029-SS-AA-AB-0 | KWSB0030-SS-AA-AB-0 | KWSB0031-SS-AA-AB-0 | KWSB0032-SS-AA-AB-0 |
| | | Sample Date | 11/5/07 | 11/5/07 | 11/5/07 | 11/5/07 | 11/5/07 | 11/5/07 | 11/5/07 | 11/6/07 | 11/6/07 | 11/6/07 | 11/6/07 | 11/13/07 | 11/13/07 | 11/13/07 | 11/13/07 | 11/13/07 | 11/13/07 | 11/13/07 | 11/13/07 | 11/13/07 | 11/14/07 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 756 | 14200 J | 1000 | 1130 | 2260 | 2250 | 1430 | 1910 | 2520 | 1570 | 6930 | 1830 | 689 | 4770 J | 1440 | 7090 J | 7900 J | 2550 | 765 | 1860 | 3400 |
| METALS | ANTIMONY | MG/KG | 1.1 J | 5.9 J | 0.86 UJ | 2.1 J | 1.8 J | 1.6 J | 1.5 J | 1.8 J | 1 J | 0.76 UJ | 0.71 UJ | 1.3 U | 0.75 U | 3.2 J | 0.85 U | 1.4 UJ | 1.6 UJ | 0.96 U | 0.91 U | 0.7 U | 7.4 J |
| METALS | ARSENIC | MG/KG | 0.79 U | 16.5 J | 0.81 U | 4.3 | 4.1 | 4.6 | 5.7 J | 11.1 | 25.2 | 3.9 | 3.5 | 3.5 J | 0.92 J | 11.1 J | 1.1 J | 22.9 J | 27 J | 6.4 | 1.7 J | 1.5 J | 8.7 |
| METALS | BARIUM | MG/KG | 5.8 J | 44.2 J | 3.5 J | 10.1 J | 12.2 J | 11.1 J | 11.8 J | 43.8 J | 62.5 | 16 J | 12.1 J | 16.6 J | 6.3 J | 131 J | 8.4 J | 106 J | 122 J | 52.8 J | 14.4 J | 66.5 J | 99.5 |
| METALS | BERYLLIUM | MG/KG | 0.05 U | 0.41 J | 0.05 U | 0.07 U | 0.06 U | 0.06 U | 0.06 U | 0.11 J | 0.12 J | 0.07 J | 0.15 J | 0.08 U | 0.05 U | 0.14 UJ | 0.05 U | 0.43 J | 0.47 J | 0.07 J | 0.06 U | 0.05 J | 0.28 J |
| METALS | CADMIUM | MG/KG | 0.1 U | 1.9 J | 0.1 U | 0.14 U | 0.12 U | 0.12 U | 0.18 J | 0.15 U | 0.12 U | 0.09 U | 0.09 U | 0.28 J | 0.09 U | 0.96 J | 0.1 U | 0.78 J | 1.1 J | 0.32 J | 0.2 J | 0.25 J | 0.34 J |
| METALS | CALCIUM | MG/KG | 104 J | 298 J | 50 J | 62.3 J | 43.2 J | 48.4 J | 2690 | 484 J | 325 J | 736 J | 164 J | 134 J | 25 J | 4660 J | 162 J | 854 J | 975 J | 505 J | 1110 J | 312 J | 1130 J |
| METALS | CHROMIUM | MG/KG | 3.3 | 51.2 J | 3.5 | 4.9 | 7.2 J | 7.1 J | 4.2 | 16.2 | 18.8 | 9 | 14.8 | 6.6 | 2.2 J | 17.6 J | 4.7 | 58.8 J | 72.4 J | 17.9 | 8.8 | 6.7 | 14 |
| METALS | COBALT | MG/KG | 0.59 U | 2.3 UJ | 0.6 U | 0.79 U | 0.68 U | 0.69 J | 0.72 U | 0.88 U | 0.69 U | 0.53 U | 0.5 U | 0.88 U | 0.52 U | 2.3 J | 0.59 U | 0.99 UJ | 1.1 UJ | 0.67 U | 0.64 U | 0.49 U | 3.6 J |
| METALS | COPPER | MG/KG | 1.7 J | 84.8 J | 1.9 J | 4.5 J | 9.4 | 10.3 | 5.4 J | 35.3 | 24.3 | 13.1 | 5.6 | 7.4 J | 3.6 J | 50.4 J | 7.7 J | 33.4 J | 37.1 J | 15.6 J | 4.8 J | 9.5 J | 84.6 |
| METALS | CYANIDE | MG/KG | 0.04 U | 0.15 UJ | 0.04 U | 0.05 U | 0.05 U | 0.05 U | 0.05 U | 0.23 J | 0.48 J | 0.03 U | 0.03 U | 0.06 U | 0.04 U | 0.49 J | 0.04 U | 0.07 UJ | 0.08 UJ | 0.05 U | 0.04 U | 0.03 U | 0.18 J |
| METALS | IRON | MG/KG | 975 | 2390 J | 2580 | 3200 | 5820 | 5740 | 3190 | 9720 | 18500 | 7630 | 12300 | 2560 | 651 | 5130 J | 2180 | 7540 J | 8030 J | 7160 | 3290 | 3690 | 21500 |
| METALS | LEAD | MG/KG | 24.3 | 914 J | 19.9 | 68.3 | 71.1 | 74.8 | 110 | 180 | 1680 | 55.2 | 15.1 | 62.3 | 17.2 | 304 J | 62.1 | 173 J | 209 J | 134 | 23.8 | 117 | 357 |
| METALS | MAGNESIUM | MG/KG | 36.4 J | 158 J | 36.1 J | 40.5 J | 55.8 J | 66.5 J | 41.5 J | 205 J | 298 J | 351 J | 106 J | 62 J | 19.5 J | 591 J | 111 J | 425 J | 499 J | 432 J | 227 J | 160 J | 540 J |
| METALS | MANGANESE | MG/KG | 3.5 J | 6.9 J | 3 J | 4.6 J | 4.3 J | 4.5 J | 3.8 J | 6.6 | 14.7 | 8.8 | 14.9 | 5.7 J | 3.4 | 23.4 J | 5.4 | 10.2 J | 11.3 J | 17.1 | 12.1 | 31 | 128 |
| METALS | MERCURY | MG/KG | 0.06 U | 0.26 J | 0.07 U | 0.09 J | 0.08 J | 0.1 J | 0.08 U | 0.12 J | 0.4 | 0.06 U | 0.04 J | 0.1 J | 0.05 U | 0.34 J | 0.09 J | 0.19 J | 0.23 J | 0.42 | 0.06 U | 0.07 J | 0.08 J |
| METALS | NICKEL | MG/KG | 0.45 J | 6.3 J | 0.56 J | 1.3 J | 1.2 J | 1.4 J | 1.6 J | 2.1 J | 3.2 J | 2.1 J | 1.7 J | 1.3 J | 0.75 J | 7.6 J | 0.85 J | 5.3 J | 5.7 J | 3.2 J | 1.3 J | 1.6 J | 8.9 J |
| METALS | POTASSIUM | MG/KG | 91.5 J | 254 J | 87.8 J | 153 J | 112 J | 130 J | 103 J | 383 J | 396 J | 285 J | 174 J | 163 J | 69.3 J | 793 J | 118 J | 860 J | 1070 J | 941 J | 193 J | 199 J | 342 J |
| METALS | SELENIUM | MG/KG | 1.2 U | 4.5 UJ | 1.2 U | 1.5 U | 1.3 U | 1.3 U | 1.4 U | 1.7 U | 1.4 U | 1 U | 0.97 U | 1.7 U | 1 U | 3.7 J | 1.2 U | 1.9 UJ | 2.2 UJ | 1.3 U | 1.2 U | 0.96 U | 1 U |
| METALS | SILVER | MG/KG | 0.23 U | 0.89 UJ | 0.26 J | 0.31 U | 0.27 U | 0.27 U | 0.28 U | 0.34 U | 0.27 U | 0.21 U | 0.19 U | 0.34 U | 0.2 U | 0.62 UJ | 0.38 J | 0.39 UJ | 0.45 UJ | 0.26 U | 0.25 U | 0.19 U | 0.21 U |
| METALS | SODIUM | MG/KG | 220 J | 515 J | 141 J | 453 J | 142 J | 378 J | 199 J | 221 J | 302 J | 290 J | 105 J | 112 J | 28.6 U | 606 J | 36.7 J | 91.7 J | 86.4 J | 131 J | 46.8 J | 26.8 U | 143 J |
| METALS | THALLIUM | MG/KG | 1.3 UJ | 5 UJ | 1.3 UJ | 1.8 UJ | 1.5 UJ | 1.5 UJ | 1.6 U | 2 U | 1.5 U | 1.2 U | 1.1 U | 2 U | 1.2 U | 3.5 UJ | 1.3 U | 2.2 UJ | 2.5 UJ | 1.5 U | 1.4 U | 1.1 U | 1.2 U |
| METALS | VANADIUM | MG/KG | 3.7 J | 22.9 J | 3.4 J | 5.6 J | 10.2 J | 11.4 J | 7.2 J | 14 J | 12.6 J | 6.8 J | 19 | 5.8 J | 3.4 J | 10.9 J | 6.1 J | 23 J | 25.9 J | 12.6 J | 4.5 J | 7 J | 18.8 |
| METALS | ZINC | MG/KG | 2 J | 148 J | 1.9 J | 7.2 J | 7.7 J | 8.3 J | 23.8 | 21.8 | 52.3 | 18.9 | 10.6 | 12.6 | 4.1 J | 101 J | 8.3 | 80.3 J | 93.4 J | 44.5 J | 33.1 J | 64.2 J | 135 J |
| PEST/PCB | 4,4'-DDD | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDT | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1016 | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1221 | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1232 | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1242 | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1248 | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1254 | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1260 | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | BETA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DELTA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DIELDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN I | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN II | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | METHOXYCHLOR | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | TOXAPHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 1,1'-BIPHENYL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | ACENAPHTHENE | MG/KG | 0.44 U | 1.6 UJ | 0.44 U | 0.57 U | 0.51 U | 0.52 U | 0.51 U | 0.007 J | 0.51 U | 0.38 U | 0.36 U | 0.63 U | 0.39 U | 1.2 UJ | 0.43 U | 0.72 UJ | 0.86 UJ | 0.5 U | 0.48 U | 0.02 J | 0.38 U |
| SVOC | ACENAPHTHYLENE | MG/KG | 0.44 U | 1.6 UJ | 0.44 U | 0.57 U | 0.51 U | 0.52 U | 0.51 U | 0.014 J | 0.034 J | 0.025 J | 0.36 U | 0.63 U | 0.39 U | 1.2 UJ | 0.43 U | 0.72 UJ | 0.86 UJ | 0.5 U | 0.48 U | 0.36 U | 0.28 J |
| SVOC | ACETOPHENONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | ANTHRACENE | MG/KG | 0.44 U | 1.6 UJ | 0.44 U | 0.57 U | 0.51 U | 0.52 U | 0.51 U | 0.009 J | 0.016 J | 0.017 J | 0.36 U | 0.63 U | 0.39 U | 1.2 UJ | 0.43 U | 0.013 J | 0.86 UJ | 0.5 U | 0.48 U | 0.017 J | 0.16 J |
| SVOC | ATRAZINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.006 J | 0.067 J | 0.006 J | 0.016 J | 0.013 J | 0.012 J | 0.01 J | 0.029 J | 0.099 J | 0.046 J | 0.016 J | 0.63 U | 0.39 U | 1.2 UJ | 0.43 U | 0.063 J | 0.05 J | 0.018 J | 0.031 J | 0.086 J | 0.3 J |
| SVOC | BENZO(A)PYRENE | MG/KG | 0.44 U | 0.066 J | 0.44 UJ | 0.57 U | 0.015 J | 0.013 J | 0.008 J | 0.02 J | 0.099 J | 0.054 J | 0.015 J | 0.63 U | 0.39 U | 1.2 UJ | 0.43 U | 0.075 J | 0.86 UJ | 0.5 U | 0.48 U | 0.097 J | 0.33 J |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 0.008 J | 0.086 J | 0.44 UJ | 0.025 J | 0.022 J | 0.022 J | 0.011 J | 0.035 J | 0.12 J | 0.073 J | 0.012 J | 0.63 U | 0.39 U | 1.2 UJ | 0.43 U | 0.11 J | 0.12 J | 0.5 U | 0.063 J | 0.17 J | 0.99 |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | KWSB0006 | KWSB0007 | KWSB0008 | KWSB0009 | KWSB0010 | KWSB0010 | KWSB0011 | KWSB0012 | KWSB0013 | KWSB0014 | KWSB0015 | KWSB0024 | KWSB0025 | KWSB0026 | KWSB0027 | KWSB0028 | KWSB0028 | KWSB0029 | KWSB0030 | KWSB0031 | KWSB0032 |
| | | Field Sample ID | KWSB0006-SS-AA-AB-0 | KWSB0007-SS-AA-AB-0 | KWSB0008-SS-AA-AB-0 | KWSB0009-SS-AA-AB-0 | KWSB0010-SS-AA-AB-0 | KWSB0010-SS-AA-AB-1 | KWSB0011-SS-AA-AB-0 | KWSB0012-SS-AA-AB-0 | KWSB0013-SS-AA-AB-0 | KWSB0014-SS-AA-AB-0 | KWSB0015-SS-AA-AB-0 | KWSB0024-SS-AA-AB-0 | KWSB0025-SS-AA-AB-0 | KWSB0026-SS-AA-AB-0 | KWSB0027-SS-AA-AB-0 | KWSB0028-SS-AA-AB-0 | KWSB0028-SS-AA-AB-1 | KWSB0029-SS-AA-AB-0 | KWSB0030-SS-AA-AB-0 | KWSB0031-SS-AA-AB-0 | KWSB0032-SS-AA-AB-0 |
| | | Sample Date | 11/5/07 | 11/5/07 | 11/5/07 | 11/5/07 | 11/5/07 | 11/5/07 | 11/5/07 | 11/6/07 | 11/6/07 | 11/6/07 | 11/6/07 | 11/13/07 | 11/13/07 | 11/13/07 | 11/13/07 | 11/13/07 | 11/13/07 | 11/13/07 | 11/13/07 | 11/13/07 | 11/14/07 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.44 U | 1.6 UJ | 0.44 UJ | 0.57 U | 0.51 U | 0.52 U | 0.51 U | 0.63 U | 0.51 U | 0.38 U | 0.36 U | 0.63 U | 0.39 U | 1.2 UJ | 0.43 U | 0.72 UJ | 0.86 UJ | 0.5 U | 0.48 U | 0.36 U | 0.042 J |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.01 J | 0.1 J | 0.44 UJ | 0.028 J | 0.025 J | 0.021 J | 0.012 J | 0.061 J | 0.19 J | 0.12 J | 0.022 J | 0.63 U | 0.39 U | 1.2 UJ | 0.43 U | 0.11 J | 0.12 J | 0.5 U | 0.053 J | 0.16 J | 0.7 |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | CAPROLACTAM | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | CARBAZOLE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | CHRYSENE | MG/KG | 0.008 J | 0.089 J | 0.012 J | 0.023 J | 0.021 J | 0.017 J | 0.011 J | 0.039 J | 0.099 J | 0.057 J | 0.019 J | 0.63 U | 0.39 U | 1.2 UJ | 0.43 U | 0.1 J | 0.092 J | 0.025 J | 0.041 J | 0.11 J | 0.46 |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.44 U | 1.6 UJ | 0.44 UJ | 0.57 U | 0.51 U | 0.52 U | 0.51 U | 0.008 J | 0.019 J | 0.01 J | 0.36 U | 0.63 U | 0.39 U | 1.2 UJ | 0.43 U | 0.72 UJ | 0.86 UJ | 0.5 U | 0.48 U | 0.36 U | 0.066 J |
| SVOC | DIBENZOFURAN | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIMETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | FLUORANTHENE | MG/KG | 0.015 J | 0.17 J | 0.014 J | 0.044 J | 0.037 J | 0.034 J | 0.024 J | 0.081 J | 0.2 J | 0.13 J | 0.029 J | 0.63 U | 0.39 U | 1.2 UJ | 0.43 U | 0.16 J | 0.15 J | 0.044 J | 0.063 J | 0.19 J | 0.62 |
| SVOC | FLUORENE | MG/KG | 0.44 U | 1.6 UJ | 0.44 U | 0.57 U | 0.51 U | 0.52 U | 0.51 U | 0.63 U | 0.51 U | 0.005 J | 0.36 U | 0.63 U | 0.39 U | 1.2 UJ | 0.43 U | 0.72 UJ | 0.86 UJ | 0.5 U | 0.48 U | 0.021 J | 0.008 J |
| SVOC | HEXACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.44 U | 0.03 J | 0.44 UJ | 0.006 J | 0.51 U | 0.52 U | 0.51 U | 0.015 J | 0.039 J | 0.022 J | 0.007 J | 0.63 U | 0.39 U | 1.2 UJ | 0.43 U | 0.72 UJ | 0.86 UJ | 0.5 U | 0.48 U | 0.083 J | 0.14 J |
| SVOC | ISOPHORONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | NAPHTHALENE | MG/KG | 0.44 U | 1.6 UJ | 0.44 U | 0.57 U | 0.51 U | 0.52 U | 0.51 U | 0.63 U | 0.51 U | 0.38 U | 0.36 U | 0.63 U | 0.39 U | 1.2 UJ | 0.43 U | 0.72 UJ | 0.86 UJ | 0.5 U | 0.48 U | 0.36 U | 0.016 J |
| SVOC | NITROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | PENTACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | PHENANTHRENE | MG/KG | 0.009 J | 0.049 J | 0.007 J | 0.025 J | 0.02 J | 0.018 J | 0.009 J | 0.036 J | 0.048 J | 0.066 J | 0.011 J | 0.63 U | 0.39 U | 1.2 UJ | 0.43 U | 0.11 J | 0.1 J | 0.022 J | 0.021 J | 0.19 J | 0.1 J |
| SVOC | PHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| SVOC | PYRENE | MG/KG | 0.008 J | 0.088 J | 0.012 J | 0.025 J | 0.021 J | 0.024 J | 0.018 J | 0.044 J | 0.14 J | 0.096 J | 0.028 J | 0.63 U | 0.39 U | 1.2 UJ | 0.43 U | 0.12 J | 0.1 J | 0.032 J | 0.05 J | 0.15 J | 0.43 |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMOETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | ACETONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOFORM | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON DISULFIDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON TETRACHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROFORM | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | CYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | ETHYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | ISOPROPYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ACETATE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ETHYL KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYLCYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | STYRENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TETRACHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | VINYL CHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | | | | | | | | | | | | | | | | | | | | | |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | KWSB0033 | KWSB0035 | KWSB0036 | KWSB0037 | KWSB0038 | KWSB0039 | KWSB0040 | KWSB0040 | KWSB0041 | KWSB0042 | KWSB0043 |
| | | Field Sample ID | KWSB0033-SS-AA-AB-0 | KWSB0035-SS-AA-AB-0 | KWSB0036-SS-AA-AB-0 | KWSB0037-SS-AA-AB-0 | KWSB0038-SS-AA-AB-0 | KWSB0039-SS-AA-AB-0 | KWSB0040-SS-AA-AB-0 | KWSB0040-SS-AA-AB-1 | KWSB0041-SS-AA-AB-0 | KWSB0042-SS-AA-AB-0 | KWSB0043-SS-AA-AB-0 |
| | | Sample Date | 11/14/07 | 11/14/07 | 11/14/07 | 11/14/07 | 11/14/07 | 3/29/11 | 3/29/11 | 3/29/11 | 3/29/11 | 3/29/11 | 3/29/11 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 3290 | 2450 | 963 | 1070 | 6150 J | 2310 | 2760 | 2320 | 11700 J | 3550 J | 1090 |
| METALS | ANTIMONY | MG/KG | 1.6 J | 1.7 J | 0.8 UJ | 1.3 J | 2.5 J | 5.5 UJ | 9.6 UJ | 7.5 UJ | 29.4 UJ | 9.1 UJ | 7.7 UJ |
| METALS | ARSENIC | MG/KG | 7.3 | 3.5 | 2.1 J | 8.8 | 21.5 J | 5.1 | 6.2 J | 3.6 J | 11 J | 3.7 J | 4.1 |
| METALS | BARIUM | MG/KG | 27.3 J | 498 | 15.4 J | 15.8 J | 90.3 J | 23 | 147 J | 69.5 J | 37.3 J | 25.1 J | 6.6 J |
| METALS | BERYLLIUM | MG/KG | 0.21 J | 0.11 J | 0.05 U | 0.05 U | 0.42 J | 0.077 J | 0.061 J | 0.037 J | 0.18 J | 0.043 J | 0.64 U |
| METALS | CADMIUM | MG/KG | 0.1 U | 0.84 J | 0.1 U | 0.09 U | 1.1 J | 0.46 U | 0.78 J | 0.62 U | 2.4 J | 0.76 UJ | 0.64 U |
| METALS | CALCIUM | MG/KG | 117 J | 853 J | 48 J | 171 J | 1450 J | 164 J | 70.4 J | 67.3 J | 539 J | 349 J | 41.4 J |
| METALS | CHROMIUM | MG/KG | 29.1 | 14.8 | 3.2 | 9.3 | 35.2 J | 11.4 | 35.1 J | 13.4 J | 24.4 J | 6.5 J | 5.2 |
| METALS | COBALT | MG/KG | 0.58 J | 1.7 J | 0.56 U | 0.54 U | 1.1 UJ | 4.6 U | 8 U | 6.2 U | 24.5 UJ | 7.6 UJ | 6.4 U |
| METALS | COPPER | MG/KG | 15.5 | 51.8 | 5.1 J | 6.8 | 66 J | 9.7 | 41.9 J | 24.7 J | 75.8 J | 10.8 J | 8.2 |
| METALS | CYANIDE | MG/KG | 0.04 U | 0.13 J | 0.04 U | 0.04 U | 0.08 UJ | 0.5 U | 1.9 | 1.7 | 3.1 UJ | 1 UJ | 0.71 U |
| METALS | IRON | MG/KG | 8910 | 5900 | 2700 | 3040 | 12900 J | 7620 J | 25000 J | 8380 J | 2260 J | 1990 J | 2930 J |
| METALS | LEAD | MG/KG | 96 | 592 | 51.9 | 63.6 | 349 J | 124 D | 252 JD | 151 JD | 664 JD | 122 JD | 122 D |
| METALS | MAGNESIUM | MG/KG | 633 J | 478 J | 39.5 J | 171 J | 561 J | 211 J | 82.8 J | 53.7 J | 202 J | 68.6 J | 72.4 J |
| METALS | MANGANESE | MG/KG | 18.2 | 56.3 | 4.2 | 6 | 12.5 J | 28.5 | 36 J | 11.7 J | 9.4 J | 4.1 J | 11.3 |
| METALS | MERCURY | MG/KG | 0.06 U | 0.76 | 0.07 J | 0.07 J | 0.26 J | 0.2 | 0.15 J | 0.14 U | 0.35 J | 0.18 J | 0.14 |
| METALS | NICKEL | MG/KG | 2.9 J | 6.9 J | 0.73 J | 1.5 J | 7.6 J | 2.6 J | 10 | 3.5 J | 7.5 J | 2.1 J | 2.5 J |
| METALS | POTASSIUM | MG/KG | 1870 J | 334 J | 115 J | 439 J | 1230 J | 379 J | 134 J | 107 J | 476 J | 208 J | 206 J |
| METALS | SELENIUM | MG/KG | 1.4 J | 1 U | 1.1 U | 1.1 U | 2.9 J | 3.2 U | 5.6 U | 4.3 U | 17.2 UJ | 1.2 J | 4.5 U |
| METALS | SILVER | MG/KG | 0.22 U | 0.21 U | 0.22 U | 0.21 U | 0.44 UJ | 0.92 U | 1.6 U | 1.2 U | 4.9 UJ | 1.5 UJ | 1.3 U |
| METALS | SODIUM | MG/KG | 77.5 J | 36.3 J | 97.7 J | 33.9 J | 127 J | 14.6 J | 13.2 J | 9.3 J | 66.8 J | 34 J | 18.5 J |
| METALS | THALLIUM | MG/KG | 1.3 U | 1.2 U | 1.2 U | 1.2 U | 2.5 UJ | 2.3 U | 4 U | 3.1 U | 12.3 UJ | 3.8 UJ | 3.2 U |
| METALS | VANADIUM | MG/KG | 16.6 | 16.5 | 7.7 J | 9.7 J | 22.5 J | 9.2 | 9.9 | 8.2 | 22.3 J | 6 J | 9.6 |
| METALS | ZINC | MG/KG | 29 J | 428 J | 4.7 J | 14.3 J | 104 J | 21.1 | 392 JD | 158 J | 77.7 J | 11.5 J | 14.7 |
| PEST/PCB | 4,4'-DDD | MG/KG | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDE | MG/KG | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDT | MG/KG | | | | | | | | | | | |
| PEST/PCB | ALDRIN | MG/KG | | | | | | | | | | | |
| PEST/PCB | ALPHA-BHC | MG/KG | | | | | | | | | | | |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1016 | MG/KG | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1221 | MG/KG | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1232 | MG/KG | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1242 | MG/KG | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1248 | MG/KG | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1254 | MG/KG | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1260 | MG/KG | | | | | | | | | | | |
| PEST/PCB | BETA-BHC | MG/KG | | | | | | | | | | | |
| PEST/PCB | DELTA-BHC | MG/KG | | | | | | | | | | | |
| PEST/PCB | DIELDRIN | MG/KG | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN I | MG/KG | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN II | MG/KG | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | | | | | | | | | | | |
| PEST/PCB | ENDRIN | MG/KG | | | | | | | | | | | |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | | | | | | | | | | | |
| PEST/PCB | ENDRIN KETONE | MG/KG | | | | | | | | | | | |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | | | | | | | | | | | |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR | MG/KG | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | | | | | | | | | | | |
| PEST/PCB | METHOXYCHLOR | MG/KG | | | | | | | | | | | |
| PEST/PCB | TOXAPHENE | MG/KG | | | | | | | | | | | |
| SVOC | 1,1'-BIPHENYL | MG/KG | | | | | | | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | | | | | | | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | | | | | | | | | | | |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | | | | | | | | | | | |
| SVOC | 2,4-DINITROPHENOL | MG/KG | | | | | | | | | | | |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | | | | | | | | | | | |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | | | | | | | | | | | |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | | | | | | | | | | | |
| SVOC | 2-CHLOROPHENOL | MG/KG | | | | | | | | | | | |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | | | | | | | | | | | |
| SVOC | 2-METHYLPHENOL | MG/KG | | | | | | | | | | | |
| SVOC | 2-NITROANILINE | MG/KG | | | | | | | | | | | |
| SVOC | 2-NITROPHENOL | MG/KG | | | | | | | | | | | |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | | | | | | | | | | | |
| SVOC | 3-NITROANILINE | MG/KG | | | | | | | | | | | |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | | | | | | | | | | | |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | | | | | | | | | | | |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | | | | | | | | | | | |
| SVOC | 4-CHLOROANILINE | MG/KG | | | | | | | | | | | |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | | | | | | | | | | | |
| SVOC | 4-METHYLPHENOL | MG/KG | | | | | | | | | | | |
| SVOC | 4-NITROANILINE | MG/KG | | | | | | | | | | | |
| SVOC | 4-NITROPHENOL | MG/KG | | | | | | | | | | | |
| SVOC | ACENAPHTHENE | MG/KG | 0.023 J | 0.38 U | 0.42 U | 0.014 J | 0.85 UJ | | | | | | |
| SVOC | ACENAPHTHYLENE | MG/KG | 0.009 J | 0.013 J | 0.42 U | 0.018 J | 0.024 J | | | | | | |
| SVOC | ACETOPHENONE | MG/KG | | | | | | | | | | | |
| SVOC | ANTHRACENE | MG/KG | 0.075 J | 0.026 J | 0.42 U | 0.056 J | 0.014 J | | | | | | |
| SVOC | ATRAZINE | MG/KG | | | | | | | | | | | |
| SVOC | BENZALDEHYDE | MG/KG | | | | | | | | | | | |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.15 J | 0.21 J | 0.007 J | 0.18 J | 0.048 J | | | | | | |
| SVOC | BENZO(A)PYRENE | MG/KG | 0.13 J | 0.2 J | 0.008 J | 0.16 J | 0.048 J | | | | | | |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 0.14 J | 0.25 J | 0.01 J | 0.22 J | 0.065 J | | | | | | |

**Table 1 Soil Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | KWSB0033 | KWSB0035 | KWSB0036 | KWSB0037 | KWSB0038 | KWSB0039 | KWSB0040 | KWSB0040 | KWSB0041 | KWSB0042 | KWSB0043 |
| | | Field Sample ID | KWSB0033-SS-AA-AB-0 | KWSB0035-SS-AA-AB-0 | KWSB0036-SS-AA-AB-0 | KWSB0037-SS-AA-AB-0 | KWSB0038-SS-AA-AB-0 | KWSB0039-SS-AA-AB-0 | KWSB0040-SS-AA-AB-0 | KWSB0040-SS-AA-AB-1 | KWSB0041-SS-AA-AB-0 | KWSB0042-SS-AA-AB-0 | KWSB0043-SS-AA-AB-0 |
| | | Sample Date | 11/14/07 | 11/14/07 | 11/14/07 | 11/14/07 | 11/14/07 | 3/29/11 | 3/29/11 | 3/29/11 | 3/29/11 | 3/29/11 | 3/29/11 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.028 J | 0.022 J | 0.42 U | 0.016 J | 0.013 J | | | | | | |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.16 J | 0.27 J | 0.011 J | 0.23 J | 0.054 J | | | | | | |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | | | | | | | | | | | |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | | | | | | | | | | | |
| SVOC | CAPROLACTAM | MG/KG | | | | | | | | | | | |
| SVOC | CARBAZOLE | MG/KG | | | | | | | | | | | |
| SVOC | CHRYSENE | MG/KG | 0.15 J | 0.23 J | 0.012 J | 0.18 J | 0.071 J | | | | | | |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.018 J | 0.031 J | 0.42 U | 0.025 J | 0.013 J | | | | | | |
| SVOC | DIBENZOFURAN | MG/KG | | | | | | | | | | | |
| SVOC | DIETHYLPHTHALATE | MG/KG | | | | | | | | | | | |
| SVOC | DIMETHYLPHTHALATE | MG/KG | | | | | | | | | | | |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | | | | | | | | | | | |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | | | | | | | | | | | |
| SVOC | FLUORANTHENE | MG/KG | 0.45 | 0.35 J | 0.019 J | 0.46 | 0.12 J | | | | | | |
| SVOC | FLUORENE | MG/KG | 0.037 J | 0.38 U | 0.42 U | 0.018 J | 0.85 UJ | | | | | | |
| SVOC | HEXACHLOROBENZENE | MG/KG | | | | | | | | | | | |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | | | | | | | | | | | |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | | | | | | | | | | | |
| SVOC | HEXACHLOROETHANE | MG/KG | | | | | | | | | | | |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.046 J | 0.076 J | 0.42 U | 0.052 J | 0.032 J | | | | | | |
| SVOC | ISOPHORONE | MG/KG | | | | | | | | | | | |
| SVOC | NAPHTHALENE | MG/KG | 0.42 U | 0.38 U | 0.42 U | 0.39 U | 0.85 UJ | | | | | | |
| SVOC | NITROBENZENE | MG/KG | | | | | | | | | | | |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | | | | | | | | | | | |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | | | | | | | | | | | |
| SVOC | PENTACHLOROPHENOL | MG/KG | | | | | | | | | | | |
| SVOC | PHENANTHRENE | MG/KG | 0.4 J | 0.13 J | 0.01 J | 0.26 J | 0.061 J | | | | | | |
| SVOC | PHENOL | MG/KG | | | | | | | | | | | |
| SVOC | PYRENE | MG/KG | 0.27 J | 0.22 J | 0.012 J | 0.31 J | 0.082 J | | | | | | |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | | | | | | | | | | | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHANE | MG/KG | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHENE | MG/KG | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | | | | | | | | | | | |
| VOC | 1,2-DIBROMOETHANE | MG/KG | | | | | | | | | | | |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | | | | | | | | | | | |
| VOC | 1,2-DICHLOROETHANE | MG/KG | | | | | | | | | | | |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | | | | | | | | | | | |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | | | | | | | | | | | |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | | | | | | | | | | | |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | | | | | | | | | | | |
| VOC | ACETONE | MG/KG | | | | | | | | | | | |
| VOC | BENZENE | MG/KG | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | | | | | | | | | | | |
| VOC | BROMOFORM | MG/KG | | | | | | | | | | | |
| VOC | BROMOMETHANE | MG/KG | | | | | | | | | | | |
| VOC | CARBON DISULFIDE | MG/KG | | | | | | | | | | | |
| VOC | CARBON TETRACHLORIDE | MG/KG | | | | | | | | | | | |
| VOC | CHLOROBENZENE | MG/KG | | | | | | | | | | | |
| VOC | CHLOROETHANE | MG/KG | | | | | | | | | | | |
| VOC | CHLOROFORM | MG/KG | | | | | | | | | | | |
| VOC | CHLOROMETHANE | MG/KG | | | | | | | | | | | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | |
| VOC | CYCLOHEXANE | MG/KG | | | | | | | | | | | |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | | | | | | | | | | | |
| VOC | DICHLOROMETHANE | MG/KG | | | | | | | | | | | |
| VOC | ETHYLBENZENE | MG/KG | | | | | | | | | | | |
| VOC | ISOPROPYLBENZENE | MG/KG | | | | | | | | | | | |
| VOC | METHYL ACETATE | MG/KG | | | | | | | | | | | |
| VOC | METHYL ETHYL KETONE | MG/KG | | | | | | | | | | | |
| VOC | METHYLCYCLOHEXANE | MG/KG | | | | | | | | | | | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | | | | | | | | | | | |
| VOC | STYRENE | MG/KG | | | | | | | | | | | |
| VOC | TETRACHLOROETHENE | MG/KG | | | | | | | | | | | |
| VOC | TOLUENE | MG/KG | | | | | | | | | | | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | | | | | | | | | | | |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | | | | | | | | | | | |
| VOC | VINYL CHLORIDE | MG/KG | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | | | | | | | | | | | |

Notes:
U: Not Detected; J: Estimated; R: Rejected.

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | BWDD0001 | BWDD0001 | BWDD0002 | BWDD0003 | BWDD0003 | BWDD0004 | BWDD0005 | BWDD0006 | BWDD0007 | BWDD0008 | BWDD0009 | BWDD0010 | BWDD0011 | BWDD0012 | BWDD0013 | BWDD0014 | BWDD0015 | BWDD0015 | BWDD0016 | BWDD0017 |
| | | Field Sample ID | BWDD0001-SD-AA-AB-0_A | BWDD0001-SD-AA-AB-0 | BWDD0002-SD-AA-AB-0 | BWDD0003-SD-AA-AB-0_A | BWDD0003-SD-AA-AB-0 | BWDD0004-SD-AA-AB-0 | BWDD0005-SD-AA-AB-0 | BWDD0006-SD-AA-AB-0 | BWDD0007-SD-AA-AB-0 | BWDD0008-SD-AA-AB-0 | BWDD0009-SD-AA-AB-0 | BWDD0010-SD-AA-AB-0 | BWDD0011-SD-AA-AB-0 | BWDD0012-SD-AA-AB-0 | BWDD0013-SD-AA-AB-0 | BWDD0014-SD-AA-AB-0 | BWDD0015-SD-AA-AB-0 | BWDD0015-SD-AA-AB-1 | BWDD0016-SD-AA-AB-0 | BWDD0017-SD-AA-AB-0 |
| | | Sample Date | 5/10/11 | 7/13/05 | 7/13/05 | 5/10/11 | 7/13/05 | 7/13/05 | 7/13/05 | 7/13/05 | 7/13/05 | 7/13/05 | 7/13/05 | 7/14/05 | 7/14/05 | 7/14/05 | 7/14/05 | 7/14/05 | 7/14/05 | 7/14/05 | 7/14/05 | 7/14/05 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 780 J | 3230 J | 5180 J | 908 J | 1370 | 15600 J | 20500 J | 20300 J | 20500 J | 24500 J | 19400 J | 7260 J | 6200 J | 8590 J | 13300 J | 15500 J | 5490 J | 6870 J | 20900 J | 21200 J |
| METALS | ANTIMONY | MG/KG | 5 UJ | 3.5 UJ | 5.4 J | 7.9 UJ | 2.7 U | 6.3 J | 11.3 UJ | 10.8 UJ | 10.8 UJ | 12.6 J | 8.6 J | 4.7 UJ | 4.5 UJ | 12.7 J | 24.9 J | 38.1 J | 4.4 UJ | 5.6 J | 9.5 UJ | 9.6 J |
| METALS | ARSENIC | MG/KG | 4 J | 31.1 J | 55 J | 4.5 J | 11.2 | 300 J | 332 J | 546 J | 333 J | 524 J | 247 J | 74 J | 89.4 J | 50.6 J | 101 J | 120 J | 116 J | 147 J | 385 J | 470 J |
| METALS | BARIUM | MG/KG | 8.1 J | 73.2 J | 79.8 J | 10.2 J | 23.5 J | 303 J | 356 J | 383 J | 396 J | 415 J | 372 J | 195 J | 153 J | 179 J | 347 J | 316 J | 158 J | 190 J | 275 J | 367 J |
| METALS | BERYLLIUM | MG/KG | 0.41 U | 0.35 J | 0.47 J | 0.65 U | 0.11 U | 1.4 J | 2 J | 2.4 J | 2 J | 2.6 J | 1.8 J | 0.71 J | 0.67 J | 1.1 J | 2.3 J | 2.5 J | 0.55 J | 0.72 J | 1.7 J | 2 J |
| METALS | CADMIUM | MG/KG | 0.18 J | 1.3 J | 2.2 J | 0.22 J | 0.15 U | 13.7 J | 17.8 J | 24.6 J | 21.5 J | 24.3 J | 17.7 J | 5.5 J | 3.5 J | 5.9 J | 9.3 J | 7.7 J | 2.4 J | 2.5 J | 14.9 J | 27.9 J |
| METALS | CALCIUM | MG/KG | 382 J | 5010 J | 4030 J | 442 J | 1370 J | 1070 J | 2950 J | 3670 J | 3710 J | 5170 J | 4160 J | 3620 J | 2620 J | 5690 J | 6030 J | 9490 J | 1120 J | 1340 J | 966 J | 3430 J |
| METALS | CHROMIUM | MG/KG | 3.1 | 12.6 J | 19.9 J | 4.7 | 6.4 | 129 J | 157 J | 210 J | 171 J | 216 J | 139 J | 44.7 J | 23.6 J | 24.2 J | 35.4 J | 39.8 J | 46.3 J | 61 J | 179 J | 217 J |
| METALS | COBALT | MG/KG | 0.42 J | 3 J | 5.1 J | 0.5 J | 1.2 U | 16.9 J | 29.2 J | 24.8 J | 26 J | 25.3 J | 22 J | 10 J | 7.1 J | 7.5 J | 13 J | 11.1 J | 5.4 J | 7.2 J | 15.4 J | 24.8 J |
| METALS | COPPER | MG/KG | 5.6 | 23.3 J | 36.8 J | 6.3 | 6.4 J | 228 J | 276 J | 371 J | 298 J | 382 J | 252 J | 91.4 J | 31.8 J | 39.3 J | 58.4 J | 59 J | 75.5 J | 99.3 J | 291 J | 339 J |
| METALS | CYANIDE | MG/KG | | 1.3 UJ | 1.4 UJ | | 0.86 U | 5.5 J | 4.5 J | 8.4 J | 6.8 J | 10.3 J | 8.8 J | 1.7 UJ | 1.4 UJ | 2.3 UJ | 2.9 UJ | 4.6 UJ | 1.8 UJ | 1.9 UJ | 3.8 UJ | 10.1 J |
| METALS | IRON | MG/KG | 1360 | 10400 J | 23500 J | 3310 | 7310 J | 32100 J | 41400 J | 36800 J | 37400 J | 40600 J | 30700 J | 18900 J | 21800 J | 18800 J | 36300 J | 39700 J | 14700 J | 15800 J | 26700 J | 36900 J |
| METALS | LEAD | MG/KG | 57.5 JD | R | 178 J | 30 J | R | 1650 J | 1950 J | 2640 J | 2450 J | 3450 J | 2670 J | 680 J | 402 J | 1490 J | 2590 J | 5840 J | 571 J | 778 J | 2140 J | 2740 J |
| METALS | MAGNESIUM | MG/KG | 53 J | 583 J | 1300 J | 50.5 J | 121 J | 645 J | 997 J | 857 J | 853 J | 860 J | 1110 J | 487 J | 473 J | 518 J | 765 J | 716 J | 215 J | 252 J | 692 J | 741 J |
| METALS | MANGANESE | MG/KG | 4 | 71.3 J | 59.6 J | 8.1 | 38.5 | 57.7 J | 112 J | 96.1 J | 93.1 J | 70.1 J | 89.3 J | 125 J | 105 J | 38.4 J | 121 J | 156 J | 63.5 J | 81.8 J | 39 J | 70.6 J |
| METALS | MERCURY | MG/KG | 0.11 U | 0.11 UJ | 0.12 UJ | 0.15 U | 0.085 U | 0.4 J | 0.55 J | 0.65 J | 0.6 J | 0.88 J | 0.67 J | 0.21 J | 0.16 UJ | 0.24 UJ | 0.33 UJ | 0.49 J | 0.23 J | 0.25 J | 0.79 J | 0.55 J |
| METALS | NICKEL | MG/KG | 1.5 J | 4.9 J | 9.4 J | 1.2 J | 1.2 J | 24.6 J | 37 J | 36.3 J | 37.8 J | 42.1 J | 34.9 J | 13.9 J | 9.7 J | 14.3 J | 23 J | 22.5 J | 8.5 J | 10.7 J | 29.6 J | 38.4 J |
| METALS | POTASSIUM | MG/KG | 41.7 J | 434 UJ | 504 UJ | 52.3 J | 342 U | 703 UJ | 1430 UJ | 1350 UJ | 1360 UJ | 1300 UJ | 976 UJ | 603 J | 561 UJ | 821 UJ | 1130 UJ | 1650 UJ | 553 UJ | 688 UJ | 1190 UJ | 949 UJ |
| METALS | SELENIUM | MG/KG | 2.9 U | 2.2 UJ | 2.5 UJ | 4.6 U | 1.7 UJ | 3.5 UJ | 7.1 UJ | 6.8 UJ | 6.8 UJ | 6.5 UJ | 4.9 UJ | 3 UJ | 2.8 UJ | 4.1 UJ | 5.7 UJ | 8.2 UJ | 2.8 UJ | 3.4 UJ | 5.9 UJ | 4.7 UJ |
| METALS | SILVER | MG/KG | 0.83 U | 0.97 UJ | 1.1 UJ | 1.3 U | 0.76 U | 1.6 UJ | 3.2 UJ | 3 UJ | 3 UJ | 2.9 UJ | 2.2 UJ | 1.3 UJ | 1.2 UJ | 1.8 UJ | 2.5 UJ | 3.7 UJ | 1.2 UJ | 1.5 UJ | 2.6 UJ | 2.1 UJ |
| METALS | SODIUM | MG/KG | 43.4 J | 295 UJ | 342 UJ | 12.4 J | 232 U | 478 UJ | 969 UJ | 921 UJ | 922 UJ | 887 UJ | 663 UJ | 405 UJ | 381 UJ | 558 UJ | 770 UJ | 1120 UJ | 376 UJ | 468 UJ | 807 UJ | 645 UJ |
| METALS | THALLIUM | MG/KG | 2.1 U | 3.9 UJ | 4.5 UJ | 3.3 U | 3.1 U | 6.3 UJ | 12.9 UJ | 12.2 UJ | 12.2 UJ | 11.8 UJ | 8.8 UJ | 5.4 UJ | 5.1 UJ | 7.4 UJ | 10.2 UJ | 14.8 UJ | 5 UJ | 6.2 UJ | 10.7 UJ | 8.6 UJ |
| METALS | VANADIUM | MG/KG | 2.6 J | 11.7 J | 18.5 J | 3.7 J | 5.7 J | 55.3 J | 64.9 J | 57.3 J | 62.9 J | 78 J | 62.4 J | 21.5 J | 18.6 J | 24.3 J | 36.4 J | 49.8 J | 19.4 J | 27 J | 73.6 J | 68.4 J |
| METALS | ZINC | MG/KG | 34.3 | 181 J | 366 J | 38.2 | 57.8 | 1040 J | 1760 J | 1830 J | 1830 J | 1780 J | 1470 J | 514 J | 374 J | 486 J | 706 J | 590 J | 247 J | 278 J | 1130 J | 1880 J |
| PEST/PCB | 4,4'-DDD | MG/KG | | 0.0087 UJ | 0.0057 J | | 0.0062 U | 0.024 J | 0.026 J | 0.029 J | 0.027 J | 0.05 J | 0.031 J | 0.0092 J | 0.01 UJ | 0.016 UJ | 0.014 J | 0.04 J | 0.013 J | 0.013 J | 0.037 J | 0.029 J |
| PEST/PCB | 4,4'-DDE | MG/KG | | 0.0087 UJ | 0.01 UJ | | 0.0062 U | 0.049 J | 0.05 J | 0.065 J | 0.058 J | 0.096 J | 0.06 J | 0.012 J | 0.01 UJ | 0.016 UJ | 0.025 UJ | 0.017 J | 0.016 J | 0.016 J | 0.058 J | 0.07 J |
| PEST/PCB | 4,4'-DDT | MG/KG | | 0.0087 UJ | 0.01 UJ | | 0.0062 UJ | 0.015 UJ | 0.027 UJ | 0.03 UJ | 0.027 UJ | 0.025 UJ | 0.021 UJ | 0.012 UJ | 0.01 UJ | 0.016 UJ | 0.025 UJ | 0.03 UJ | 0.013 UJ | 0.014 UJ | 0.028 UJ | 0.022 UJ |
| PEST/PCB | ALDRIN | MG/KG | | 0.0045 UJ | 0.0051 UJ | | 0.0032 U | 0.0077 UJ | 0.014 UJ | 0.015 UJ | 0.014 UJ | 0.013 UJ | 0.011 UJ | 0.0063 UJ | 0.0053 UJ | 0.0085 UJ | 0.013 UJ | 0.015 UJ | 0.0065 UJ | 0.0071 UJ | 0.014 UJ | 0.011 UJ |
| PEST/PCB | ALPHA-BHC | MG/KG | | 0.0045 UJ | 0.0051 UJ | | 0.0032 U | 0.0077 UJ | 0.014 UJ | 0.015 UJ | 0.014 UJ | 0.013 UJ | 0.011 UJ | 0.0063 UJ | 0.0053 UJ | 0.0085 UJ | 0.013 UJ | 0.015 UJ | 0.0065 UJ | 0.0071 UJ | 0.014 UJ | 0.011 UJ |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | | 0.0045 UJ | 0.0051 UJ | | 0.0032 U | 0.0077 UJ | 0.014 UJ | 0.015 UJ | 0.014 UJ | 0.013 UJ | 0.011 UJ | 0.0063 UJ | 0.0053 UJ | 0.0085 UJ | 0.013 UJ | 0.015 UJ | 0.0065 UJ | 0.0071 UJ | 0.014 UJ | 0.011 UJ |
| PEST/PCB | AROCLOR-1016 | MG/KG | | 0.087 UJ | 0.1 UJ | | 0.062 U | 0.15 UJ | 0.27 UJ | 0.3 UJ | 0.27 UJ | 0.25 UJ | 0.21 UJ | 0.12 UJ | 0.1 UJ | 0.16 UJ | 0.25 UJ | 0.3 UJ | 0.13 UJ | 0.14 UJ | 0.28 UJ | 0.22 UJ |
| PEST/PCB | AROCLOR-1221 | MG/KG | | 0.18 UJ | 0.2 UJ | | 0.13 U | 0.3 UJ | 0.56 UJ | 0.61 UJ | 0.56 UJ | 0.52 UJ | 0.42 UJ | 0.25 UJ | 0.21 UJ | 0.33 UJ | 0.52 UJ | 0.61 UJ | 0.26 UJ | 0.28 UJ | 0.56 UJ | 0.45 UJ |
| PEST/PCB | AROCLOR-1232 | MG/KG | | 0.087 UJ | 0.1 UJ | | 0.062 U | 0.15 UJ | 0.27 UJ | 0.3 UJ | 0.27 UJ | 0.25 UJ | 0.21 UJ | 0.12 UJ | 0.1 UJ | 0.16 UJ | 0.25 UJ | 0.3 UJ | 0.13 UJ | 0.14 UJ | 0.28 UJ | 0.22 UJ |
| PEST/PCB | AROCLOR-1242 | MG/KG | | 0.087 UJ | 0.1 UJ | | 0.062 U | 0.15 UJ | 0.27 UJ | 0.3 UJ | 0.27 UJ | 0.25 UJ | 0.21 UJ | 0.12 UJ | 0.1 UJ | 0.16 UJ | 0.25 UJ | 0.3 UJ | 0.13 UJ | 0.14 UJ | 0.28 UJ | 0.22 UJ |
| PEST/PCB | AROCLOR-1248 | MG/KG | | 0.087 UJ | 0.1 UJ | | 0.062 U | 0.15 UJ | 0.27 UJ | 0.3 UJ | 0.27 UJ | 0.25 UJ | 0.21 UJ | 0.12 UJ | 0.1 UJ | 0.16 UJ | 0.25 UJ | 0.3 UJ | 0.13 UJ | 0.14 UJ | 0.28 UJ | 0.22 UJ |
| PEST/PCB | AROCLOR-1254 | MG/KG | | 0.087 UJ | 0.1 UJ | | 0.062 U | 0.15 UJ | 0.27 UJ | 0.3 UJ | 0.27 UJ | 0.25 UJ | 0.21 UJ | 0.12 UJ | 0.1 UJ | 0.16 UJ | 0.25 UJ | 0.3 UJ | 0.13 UJ | 0.14 UJ | 0.28 UJ | 0.22 UJ |
| PEST/PCB | AROCLOR-1260 | MG/KG | | 0.087 UJ | 0.1 UJ | | 0.062 U | 0.15 UJ | 0.27 UJ | 0.3 UJ | 0.27 UJ | 0.25 UJ | 0.11 J | 0.12 UJ | 0.1 UJ | 0.11 J | 0.16 J | 0.2 J | 0.13 UJ | 0.14 UJ | 0.28 UJ | 0.22 UJ |
| PEST/PCB | AROCLOR-1262 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1268 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | BETA-BHC | MG/KG | | 0.0037 J | 0.0051 UJ | | 0.0032 U | 0.0077 UJ | 0.014 UJ | 0.015 UJ | 0.014 UJ | 0.013 UJ | 0.011 UJ | R | R | R | R | R | R | R | 0.014 UJ | R |
| PEST/PCB | DELTA-BHC | MG/KG | | 0.0045 UJ | 0.0051 UJ | | 0.0032 U | 0.0077 UJ | 0.014 UJ | 0.015 UJ | 0.014 UJ | 0.013 UJ | 0.011 UJ | 0.0063 UJ | 0.0053 UJ | 0.0085 UJ | 0.013 UJ | 0.015 UJ | 0.0065 UJ | 0.0071 UJ | 0.014 UJ | 0.011 UJ |
| PEST/PCB | DIELDRIN | MG/KG | | 0.0087 UJ | 0.01 UJ | | 0.0062 U | 0.015 UJ | 0.027 UJ | 0.03 UJ | 0.027 UJ | 0.025 UJ | 0.021 UJ | 0.012 UJ | 0.01 UJ | 0.016 UJ | 0.025 UJ | 0.03 UJ | 0.013 UJ | 0.014 UJ | 0.028 UJ | 0.022 UJ |
| PEST/PCB | ENDOSULFAN I | MG/KG | | 0.0045 UJ | 0.0051 UJ | | 0.0032 U | 0.0077 UJ | 0.014 UJ | 0.015 UJ | 0.014 UJ | 0.013 UJ | 0.011 UJ | 0.0063 UJ | 0.0053 UJ | 0.0085 UJ | 0.013 UJ | 0.015 UJ | 0.0065 UJ | 0.0071 UJ | 0.014 UJ | 0.011 UJ |
| PEST/PCB | ENDOSULFAN II | MG/KG | | 0.0087 UJ | 0.01 UJ | | 0.0062 U | 0.015 UJ | 0.027 UJ | 0.03 UJ | 0.027 UJ | 0.025 UJ | 0.021 UJ | 0.012 UJ | 0.01 UJ | 0.016 UJ | 0.025 UJ | 0.03 UJ | 0.013 UJ | 0.014 UJ | 0.028 UJ | 0.022 UJ |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | | 0.0087 UJ | 0.01 UJ | | 0.0062 U | 0.015 UJ | 0.027 UJ | 0.03 UJ | 0.027 UJ | 0.025 UJ | 0.021 UJ | 0.012 UJ | 0.01 UJ | 0.016 UJ | 0.025 UJ | 0.03 UJ | 0.013 UJ | 0.014 UJ | 0.028 UJ | 0.022 UJ |
| PEST/PCB | ENDRIN | MG/KG | | 0.0087 UJ | 0.01 UJ | | 0.0062 U | 0.015 UJ | 0.027 UJ | 0.03 UJ | 0.027 UJ | 0.025 UJ | 0.021 UJ | 0.012 UJ | 0.01 UJ | 0.016 UJ | 0.025 UJ | 0.03 UJ | 0.013 UJ | 0.014 UJ | 0.028 UJ | 0.022 UJ |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | | 0.0087 UJ | 0.01 UJ | | 0.0062 U | 0.015 UJ | 0.027 UJ | 0.03 UJ | 0.027 UJ | 0.025 UJ | 0.021 UJ | 0.012 UJ | 0.01 UJ | 0.016 UJ | 0.025 UJ | 0.03 UJ | 0.013 UJ | 0.014 UJ | 0.028 UJ | 0.022 UJ |
| PEST/PCB | ENDRIN KETONE | MG/KG | | 0.014 J | 0.01 UJ | | 0.0098 | 0.015 UJ | 0.027 UJ | 0.03 UJ | 0.027 UJ | 0.025 UJ | 0.021 UJ | 0.012 UJ | 0.01 UJ | 0.016 UJ | 0.025 UJ | 0.03 UJ | 0.013 UJ | 0.014 UJ | 0.028 UJ | 0.022 UJ |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | | 0.0045 UJ | 0.0051 UJ | | 0.0032 U | 0.0077 UJ | 0.014 UJ | 0.015 UJ | 0.014 UJ | 0.013 UJ | 0.011 UJ | 0.0057 J | 0.0053 J | 0.0083 J | 0.013 UJ | 0.01 J | 0.0062 J | 0.0071 UJ | 0.014 UJ | 0.011 UJ |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | | 0.0045 UJ | 0.0051 UJ | | 0.0032 U | 0.0077 UJ | 0.014 UJ | 0.015 UJ | 0.014 UJ | 0.013 UJ | 0.011 UJ | 0.0063 UJ | 0.0053 UJ | 0.0085 UJ | 0.013 UJ | 0.015 UJ | 0.0065 UJ | 0.0071 UJ | 0.01 J | 0.011 UJ |
| PEST/PCB | HEPTACHLOR | MG/KG | | 0.0045 UJ | 0.0051 UJ | | 0.0032 U | 0.0077 UJ | 0.014 UJ | 0.015 UJ | 0.014 UJ | 0.013 UJ | 0.011 UJ | 0.0063 UJ | 0.0053 UJ | 0.0085 UJ | 0.013 UJ | 0.015 UJ | 0.0065 UJ | 0.0071 UJ | 0.014 UJ | 0.011 UJ |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | | 0.0045 UJ | 0.0051 UJ | | 0.0032 U | 0.0077 UJ | 0.014 UJ | 0.015 UJ | 0.014 UJ | 0.013 UJ | 0.011 UJ | 0.0063 UJ | 0.0053 UJ | 0.0085 UJ | 0.013 UJ | 0.015 UJ | 0.0065 UJ | 0.0071 UJ | 0.014 UJ | R |
| PEST/PCB | METHOXYCHLOR | MG/KG | | 0.045 UJ | 0.051 UJ | | 0.032 UJ | 0.077 UJ | 0.14 UJ | 0.15 UJ | 0.14 UJ | 0.13 UJ | 0.11 UJ | 0.063 UJ | 0.053 UJ | 0.085 UJ | 0.13 UJ | 0.15 UJ | 0.065 UJ | 0.071 UJ | 0.14 UJ | 0.11 UJ |
| PEST/PCB | TOXAPHENE | MG/KG | | 0.45 UJ | 0.51 UJ | | 0.32 U | 0.77 UJ | 1.4 UJ | 1.5 UJ | 1.4 UJ | 1.3 UJ | 1.1 UJ | 0.63 UJ | 0.53 UJ | 0.85 UJ | 1.3 UJ | 1.5 UJ | 0.65 UJ | 0.71 UJ | 1.4 UJ | 1.1 UJ |
| SVOC | 1,1'-BIPHENYL | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | 1,2,4,5-TETRACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | 2,3,4,6-TETRACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | | 2.2 UJ | 2.5 UJ | | 1.6 U | 3.8 UJ | 6.9 UJ | 7.6 UJ | 6.9 UJ | 6.4 UJ | 5.2 UJ | 3.1 UJ | 2.6 UJ | 4.2 UJ | 6.4 UJ | 7.6 UJ | 3.2 UJ | 3.4 UJ | 6.9 UJ | 5.5 UJ |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | 2,4-DINITROPHENOL | MG/KG | | 2.2 UJ | 2.5 UJ | | 1.6 UJ | 3.8 UJ | 6.9 UJ | 7.6 UJ | 6.9 UJ | 6.4 UJ | 5.2 UJ | 3.1 UJ | 2.6 UJ | 4.2 UJ | 6.4 UJ | 7.6 UJ | 3.2 UJ | 3.4 UJ | 6.9 UJ | 5.5 UJ |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 UJ | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | 2-CHLOROPHENOL | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 UJ | 0.082 J | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | 2-METHYLPHENOL | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | 2-NITROANILINE | MG/KG | | 2.2 UJ | 2.5 UJ | | 1.6 U | 3.8 UJ | 6.9 UJ | 7.6 UJ | 6.9 UJ | 6.4 UJ | 5.2 UJ | 3.1 UJ | 2.6 UJ | 4.2 UJ | 6.4 UJ | 7.6 UJ | 3.2 UJ | 3.4 UJ | 6.9 UJ | 5.5 UJ |
| SVOC | 2-NITROPHENOL | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | 3-NITROANILINE | MG/KG | | 2.2 UJ | 2.5 UJ | | 1.6 U | 3.8 UJ | 6.9 UJ | 7.6 UJ | 6.9 UJ | 6.4 UJ | 5.2 UJ | 3.1 UJ | 2.6 UJ | 4.2 UJ | 6.4 UJ | 7.6 UJ | 3.2 UJ | 3.4 UJ | 6.9 UJ | 5.5 UJ |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | | 2.2 UJ | 2.5 UJ | | 1.6 U | 3.8 UJ | 6.9 UJ | 7.6 UJ | 6.9 UJ | 6.4 UJ | 5.2 UJ | 3.1 UJ | 2.6 UJ | 4.2 UJ | 6.4 UJ | 7.6 UJ | 3.2 UJ | 3.4 UJ | 6.9 UJ | 5.5 UJ |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 UJ | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | 4-CHLOROANILINE | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | 4-METHYLPHENOL | MG/KG | | 0.28 J | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 0.87 J | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | 4-NITROANILINE | MG/KG | | 2.2 UJ | 2.5 UJ | | 1.6 U | 3.8 UJ | 6.9 UJ | 7.6 UJ | 6.9 UJ | 6.4 UJ | 5.2 UJ | 3.1 UJ | 2.6 UJ | 4.2 UJ | 6.4 UJ | 7.6 UJ | 3.2 UJ | 3.4 UJ | 6.9 UJ | 5.5 UJ |
| SVOC | 4-NITROPHENOL | MG/KG | | 2.2 UJ | 2.5 UJ | | 1.6 UJ | 3.8 UJ | 6.9 UJ | 7.6 UJ | 6.9 UJ | 6.4 UJ | 5.2 UJ | 3.1 UJ | 2.6 UJ | 4.2 UJ | 6.4 UJ | 7.6 UJ | 3.2 UJ | 3.4 UJ | 6.9 UJ | 5.5 UJ |
| SVOC | ACENAPHTHENE | MG/KG | | 0.14 J | 1 UJ | | 0.97 | 0.28 J | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | ACENAPHTHYLENE | MG/KG | | 0.21 J | 1 UJ | | 0.18 J | 0.11 J | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | ACETOPHENONE | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | ANTHRACENE | MG/KG | | 0.65 J | 0.08 J | | 1.6 | 0.5 J | 0.17 J | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 0.11 J | 0.12 J | 0.32 J | 0.2 J |
| SVOC | ATRAZINE | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | BENZALDEHYDE | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | | 6.5 J | 0.28 J | | 5.7 | 2.6 J | 0.74 J | 0.47 J | 0.28 J | 0.46 J | 0.43 J | 0.17 J | 0.07 J | 0.16 J | 0.21 J | 0.38 J | 0.56 J | 0.5 J | 1.5 J | 0.76 J |
| SVOC | BENZO(A)PYRENE | MG/KG | | 6.2 J | 0.32 J | | 4.5 | 2.9 J | 0.86 J | 0.59 J | 0.36 J | 0.55 J | 0.56 J | 0.22 J | 0.082 J | 0.19 J | 0.25 J | 0.44 J | 0.58 J | 0.58 J | 1.8 J | 0.91 J |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | | 9.9 J | 0.48 J | | 7.5 | 4.1 J | 1 J | 0.59 J | 0.4 J | 0.64 J | 0.9 J | 0.25 J | 0.089 J | 0.2 J | 0.36 J | 0.4 J | 0.57 J | 0.55 J | 2.2 J | 1.1 J |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | | 4.1 J | 0.16 J | | 1.9 | 1 J | 0.36 J | 0.27 J | 0.16 J | 0.24 J | 0.24 J | 0.17 J | 0.061 J | 0.14 J | 0.17 J | 3 UJ | 0.25 J | 0.23 J | 0.79 J | 0.43 J |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | | 9.7 J | 0.48 J | | 8.5 | 3 J | 1.3 J | 0.83 J | 0.51 J | 0.83 J | 0.62 J | 0.2 J | 0.11 J | 0.18 J | 0.26 J | 0.47 J | 0.79 J | 0.8 J | 1.9 J | 0.96 J |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | BWDD0001 | BWDD0001 | BWDD0002 | BWDD0003 | BWDD0003 | BWDD0004 | BWDD0005 | BWDD0006 | BWDD0007 | BWDD0008 | BWDD0009 | BWDD0010 | BWDD0011 | BWDD0012 | BWDD0013 | BWDD0014 | BWDD0015 | BWDD0015 | BWDD0016 | BWDD0017 |
| | | Field Sample ID | BWDD0001-SD-AA-AB-0_A | BWDD0001-SD-AA-AB-0 | BWDD0002-SD-AA-AB-0 | BWDD0003-SD-AA-AB-0_A | BWDD0003-SD-AA-AB-0 | BWDD0004-SD-AA-AB-0 | BWDD0005-SD-AA-AB-0 | BWDD0006-SD-AA-AB-0 | BWDD0007-SD-AA-AB-0 | BWDD0008-SD-AA-AB-0 | BWDD0009-SD-AA-AB-0 | BWDD0010-SD-AA-AB-0 | BWDD0011-SD-AA-AB-0 | BWDD0012-SD-AA-AB-0 | BWDD0013-SD-AA-AB-0 | BWDD0014-SD-AA-AB-0 | BWDD0015-SD-AA-AB-0 | BWDD0015-SD-AA-AB-1 | BWDD0016-SD-AA-AB-0 | BWDD0017-SD-AA-AB-0 |
| | | Sample Date | 5/10/11 | 7/13/05 | 7/13/05 | 5/10/11 | 7/13/05 | 7/13/05 | 7/13/05 | 7/13/05 | 7/13/05 | 7/13/05 | 7/13/05 | 7/14/05 | 7/14/05 | 7/14/05 | 7/14/05 | 7/14/05 | 7/14/05 | 7/14/05 | 7/14/05 | 7/14/05 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | | 0.87 UJ | 1 UJ | | 0.66 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | CAPROLACTAM | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | CARBAZOLE | MG/KG | | 0.18 J | 1 UJ | | 0.16 J | 0.41 J | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 0.11 J |
| SVOC | CHRYSENE | MG/KG | | 12 J | 0.58 J | | 11 | 3.7 J | 1.2 J | 0.74 J | 0.48 J | 0.75 J | 0.76 J | 0.3 J | 0.13 J | 0.22 J | 0.4 J | 0.55 J | 0.84 J | 0.81 J | 2.4 J | 1.3 J |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | | 1 J | 0.064 J | | 0.74 | 0.33 J | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 0.069 J | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 0.11 J | 1.4 UJ | 0.17 J | 0.21 J |
| SVOC | DIBENZOFURAN | MG/KG | | 0.081 J | 1 UJ | | 0.22 J | 0.17 J | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | DIETHYLPHTHALATE | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | DIMETHYLPHTHALATE | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | FLUORANTHENE | MG/KG | | 10 J | 0.45 J | | 14 | 6.8 J | 1.8 J | 1.2 J | 0.73 J | 1.1 J | 1.2 J | 0.35 J | 0.16 J | 0.23 J | 0.41 J | 0.79 J | 1.2 J | 0.94 J | 3.6 J | 2.2 J |
| SVOC | FLUORENE | MG/KG | | 0.15 J | 1 UJ | | 0.6 J | 0.4 J | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 0.06 J | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | HEXACHLOROBENZENE | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | HEXACHLOROETHANE | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | | 3.8 J | 0.16 J | | 2.1 | 0.98 J | 0.39 J | 0.25 J | 0.14 J | 0.23 J | 0.23 J | 0.12 J | 0.056 J | 0.091 J | 0.13 J | 3 UJ | 0.26 J | 0.23 J | 0.83 J | 0.31 J |
| SVOC | ISOPHORONE | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | NAPHTHALENE | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 0.12 J | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 1.8 J | 0.15 J |
| SVOC | NITROBENZENE | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | | 0.87 UJ | 1 UJ | | 0.62 U | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | PENTACHLOROPHENOL | MG/KG | | 2.2 UJ | 2.5 UJ | | 1.6 U | 3.8 UJ | 6.9 UJ | 7.6 UJ | 6.9 UJ | 6.4 UJ | 5.2 UJ | 3.1 UJ | 2.6 UJ | 4.2 UJ | 6.4 UJ | 7.6 UJ | 3.2 UJ | 3.4 UJ | 6.9 UJ | 5.5 UJ |
| SVOC | PHENANTHRENE | MG/KG | | 1.2 J | 0.15 J | | 2.4 | 3.4 J | 0.74 J | 0.52 J | 0.3 J | 0.53 J | 0.44 J | 0.14 J | 0.057 J | 0.11 J | 0.23 J | 0.4 J | 0.46 J | 0.4 J | 1.8 J | 0.96 J |
| SVOC | PHENOL | MG/KG | | 0.048 J | 1 UJ | | 0.62 UJ | 1.5 UJ | 2.7 UJ | 3 UJ | 2.7 UJ | 2.5 UJ | 2 UJ | 1.2 UJ | 1 UJ | 1.6 UJ | 2.5 UJ | 3 UJ | 1.3 UJ | 1.4 UJ | 2.8 UJ | 2.2 UJ |
| SVOC | PYRENE | MG/KG | | 8.2 J | 0.52 J | | 8.1 | 5.6 J | 1.8 J | 1.2 J | 0.73 J | 1.1 J | 1.1 J | 0.47 J | 0.21 J | 0.33 J | 0.55 J | 0.94 J | 1.3 J | 1.2 J | 3.4 J | 1.9 J |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | 1,1-DICHLOROETHANE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | 1,1-DICHLOROETHENE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | 1,2,3-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | 1,2-DIBROMOETHANE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.02 J | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | 1,2-DICHLOROETHANE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.054 J | 0.062 J | 0.042 J | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.024 J | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | 1,4-DIOXANE (P-DIOXANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | ACETONE | MG/KG | | 0.3 J | 0.14 J | | 0.06 J | 0.73 J | 0.26 J | 0.28 J | 0.31 J | 0.53 J | 0.17 J | 0.014 UJ | 0.017 UJ | 0.076 J | 1.7 J | 0.26 J | 0.08 J | 0.071 J | 0.3 J | 0.21 J |
| VOC | BENZENE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | BROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | BROMOFORM | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | BROMOMETHANE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | CARBON DISULFIDE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.022 J | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.017 J | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.021 J | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.021 J | 0.012 J |
| VOC | CARBON TETRACHLORIDE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.019 J | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | CHLOROBENZENE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.11 J | 0.11 J | 0.078 J | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.061 J | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | CHLOROETHANE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | CHLOROFORM | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.024 J | 0.018 J | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | CHLOROMETHANE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.029 J | 0.019 J | 0.022 J | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.34 J | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.073 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | CYCLOHEXANE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | DICHLOROMETHANE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | ETHYLBENZENE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.051 J | 0.058 J | 0.041 J | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.035 J | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | ISOPROPYLBENZENE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | METHYL ACETATE | MG/KG | | 0.012 J | 0.047 UJ | | 0.01 J | 0.083 UJ | 0.092 UJ | 0.024 J | 0.046 J | 0.14 UJ | 0.058 J | 0.014 UJ | 0.017 UJ | 0.019 UJ | 1 J | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | METHYL ETHYL KETONE | MG/KG | | 0.036 J | 0.048 J | | 0.019 J | 0.24 J | 0.056 J | 0.06 J | 0.093 J | 0.16 J | 0.053 J | 0.014 UJ | 0.017 UJ | 0.022 J | 0.47 J | 0.066 J | 0.023 J | 0.016 J | 0.072 J | 0.052 J |
| VOC | METHYLCYCLOHEXANE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | STYRENE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | TETRACHLOROETHENE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.22 J | 0.23 J | 0.16 J | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.15 J | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | TOLUENE | MG/KG | | 0.003 J | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.11 J | 0.1 J | 0.076 J | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 J | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.5 J | 0.47 J | 0.36 J | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.28 J | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | VINYL CHLORIDE | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.12 UJ | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |
| VOC | XYLENE, O- | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES, M & P | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | | 0.026 UJ | 0.047 UJ | | 0.017 UJ | 0.083 UJ | 0.092 UJ | 0.15 UJ | 0.17 J | 0.18 J | 0.13 J | 0.014 UJ | 0.017 UJ | 0.019 UJ | 0.11 J | 0.15 UJ | 0.049 UJ | 0.057 UJ | 0.15 UJ | 0.12 UJ |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Exposure Area | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL |
| | | Location ID | BWDD0018 | BWDD0019 | BWDD0020 | BWDD0021 | BWDD0022 | BWDD0023 | BWDD0024 | BWDD0025 | BWDD0026 | BWDD0027 | BWDD0028 | BWDD0029 | BWDD0030 | BWDD0031 | BWDD0032 | BWDD0033 | BWDD0033 | BWDD0034 | BWDD0035 | BWDD0036 |
| | | Field Sample ID | BWDD0018-SD-AA-AB-0 | BWDD0019-SD-AA-AB-0 | BWDD0020-SD-AA-AB-0 | BWDD0021-SD-AA-AB-0 | BWDD0022-SD-AA-AB-0 | BWDD0023-SD-AA-AB-0 | BWDD0024-SD-AA-AB-0 | BWDD0025-SD-AA-AB-0 | BWDD0026-SD-AA-AB-0 | BWDD0027-SD-AA-AB-0 | BWDD0028-SD-AA-AB-0 | BWDD0029-SD-AA-AB-0 | BWDD0030-SD-AA-AB-0 | BWDD0031-SD-AA-AB-0 | BWDD0032-SD-AA-AB-0 | BWDD0033-SD-AA-AB-0 | BWDD0033-SD-AA-AB-1 | BWDD0034-SD-AA-AB-0 | BWDD0035-SD-AA-AB-0 | BWDD0036-SD-AA-AB-0 |
| | | Sample Date | 7/14/05 | 7/18/05 | 7/18/05 | 7/18/05 | 7/18/05 | 7/18/05 | 7/18/05 | 7/18/05 | 7/18/05 | 7/18/05 | 7/18/05 | 7/18/05 | 7/19/05 | 7/19/05 | 7/19/05 | 7/19/05 | 7/19/05 | 7/19/05 | 7/19/05 | 7/19/05 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 28000 J | 22600 J | 24200 J | 24200 J | 1930 | 1240 | 2960 J | 18100 J | 21800 J | 13500 J | 9210 J | 15900 J | 10400 J | 8370 J | 266 | 12300 J | 17900 J | 14300 J | 17000 J | 14500 J |
| METALS | ANTIMONY | MG/KG | 13.3 J | 8.6 UJ | 8.6 UJ | 10.6 UJ | 2.4 U | 2.1 U | 3.7 UJ | 6.7 UJ | 7.3 UJ | 8 UJ | 6.2 UJ | 8.7 J | 19.1 J | 6 UJ | 1.2 U | 10.2 UJ | 18.6 J | 6.4 UJ | 6.6 J | R |
| METALS | ARSENIC | MG/KG | 1070 J | 445 J | 413 J | 359 J | 24.4 | 15.7 | 37.8 J | 400 J | 356 J | 180 J | 110 J | 666 J | 384 J | 152 J | 2.3 | 148 J | 200 J | 189 J | 298 J | 267 J |
| METALS | BARIUM | MG/KG | 367 J | 454 J | 339 J | 418 J | 52.4 J | 67.4 | 81.1 J | 340 J | 474 J | 278 J | 234 J | 152 J | 76.5 J | 709 J | 5.2 J | 147 J | 156 J | 269 J | 349 J | 344 J |
| METALS | BERYLLIUM | MG/KG | 2.7 J | 2.4 J | 2.3 J | 2.4 J | 0.2 J | 0.08 U | 0.24 J | 1.9 J | 2.3 J | 1.4 J | 0.99 J | 1 J | 0.22 J | 0.59 J | 0.04 U | 0.43 J | 0.86 J | 1.1 J | 1.1 J | 0.41 J |
| METALS | CADMIUM | MG/KG | 38.7 J | 29.7 J | 27.5 J | 20.7 J | 1 J | 0.64 J | 1.6 J | 21.5 J | 22.4 J | 12.8 J | 5.6 J | 14.5 J | 2.7 J | 8.3 J | 0.06 U | 8.2 J | 8.8 J | 12.3 J | 14.1 J | 6.3 J |
| METALS | CALCIUM | MG/KG | 6670 J | 6530 J | 7200 J | 3430 J | 756 J | 1010 J | 2360 J | 5810 J | 3560 J | 3710 J | 1620 J | 342 J | 344 J | 1800 J | 539 J | 897 J | 1040 J | 8040 J | 1330 J | 3580 J |
| METALS | CHROMIUM | MG/KG | 395 J | 275 J | 236 J | 163 J | 10.7 | 4.8 | 11.9 J | 230 J | 247 J | 88 J | 42.9 J | 164 J | 87.9 J | 35.7 J | 2.3 | 46.8 J | 79.8 J | 120 J | 160 J | 64.7 J |
| METALS | COBALT | MG/KG | 34.3 J | 26.9 J | 30.1 J | 27.5 J | 3 J | 1.7 J | 3.5 J | 22.6 J | 20 J | 15.4 J | 9.2 J | 6.6 J | 2.3 J | 12.5 J | 0.33 U | 7 J | 8.7 J | 10.6 J | 13.2 J | 8.3 J |
| METALS | COPPER | MG/KG | 566 J | 315 J | 308 J | 265 J | 14.2 | 9.3 | 15.5 J | 283 J | 258 J | 98.1 J | 75.8 J | 299 J | 163 J | 57.9 J | 0.59 J | 119 J | 176 J | 105 J | 176 J | 78.7 J |
| METALS | CYANIDE | MG/KG | 198 J | 8.7 J | 8.2 J | 3.2 UJ | 0.71 U | 0.5 U | 1.4 UJ | 2.5 UJ | 6 J | 3 J | 1.9 UJ | 3.6 UJ | 2.8 UJ | 3 UJ | 0.41 U | 4.4 UJ | 3.9 UJ | 5.2 J | 6.1 J | R |
| METALS | IRON | MG/KG | 46200 J | 47500 J | 40700 J | 61600 J | 7030 | 3720 | 9250 J | 37800 J | 39200 J | 35900 J | 19000 J | 19200 J | 13500 J | 26400 J | 1170 | 16300 J | 13700 J | 36400 J | 33800 J | 25400 J |
| METALS | LEAD | MG/KG | 4810 J | 3100 J | 3070 J | 2120 J | 136 | 128 | 139 J | 2620 J | 2900 J | 932 J | 665 J | 2470 J | 1270 J | 507 J | 7 | 1060 J | 1890 J | 1240 J | 2000 J | 933 J |
| METALS | MAGNESIUM | MG/KG | 838 J | 1470 J | 1170 J | 1270 J | 119 J | 68.9 J | 220 J | 647 J | 833 J | 1010 J | 497 J | 471 J | 258 J | 380 J | 39 U | 452 J | 562 J | 734 J | 579 J | 547 J |
| METALS | MANGANESE | MG/KG | 52.1 J | 101 J | 58.3 J | 105 J | 73.6 | 54.8 | 98.9 J | 76.8 J | 60 J | 112 J | 53.3 J | 16.9 J | 14.8 J | 72.8 J | 13.5 J | 48.8 J | 43.9 J | 163 J | 48.1 J | 89.6 J |
| METALS | MERCURY | MG/KG | 0.88 J | 0.42 J | 0.74 J | 0.48 J | 0.082 U | 0.079 U | 0.15 UJ | 0.86 J | 0.99 J | 0.46 J | 0.2 J | 0.59 J | 0.27 UJ | 0.26 UJ | 0.054 U | 0.33 UJ | 0.42 UJ | 0.39 J | 0.63 J | R |
| METALS | NICKEL | MG/KG | 50.6 J | 46 J | 45.4 J | 42.4 J | 3.4 J | 2.1 J | 4.8 J | 36.5 J | 34.7 J | 22.4 J | 18 J | 19.5 J | 8.6 J | 15.8 J | 0.39 U | 15.1 J | 23.6 J | 19.8 J | 22.7 J | 20.3 J |
| METALS | POTASSIUM | MG/KG | 1420 UJ | 1080 UJ | 1080 UJ | 1330 UJ | 303 U | 264 U | 513 J | 836 UJ | 914 UJ | 1000 UJ | 779 UJ | 1040 UJ | 965 UJ | 972 UJ | 195 U | 1660 UJ | 1220 UJ | 1050 UJ | 1010 UJ | R |
| METALS | SELENIUM | MG/KG | 7.1 UJ | 5.4 UJ | 5.4 UJ | 6.6 UJ | 1.5 U | 1.3 U | 2.3 UJ | 4.2 UJ | 4.6 UJ | 5 UJ | 3.9 UJ | 5.2 UJ | 4.8 UJ | 4.8 UJ | 0.97 U | 8.3 UJ | 6.1 UJ | 5.2 UJ | 5.1 UJ | R |
| METALS | SILVER | MG/KG | 3.2 UJ | 2.4 UJ | 2.4 UJ | 3 UJ | 0.68 U | 0.59 U | 1 UJ | 1.9 UJ | 2 UJ | 2.2 UJ | 1.7 UJ | 2.3 UJ | 1.7 UJ | 1.8 UJ | 0.35 U | 3 UJ | 2.2 UJ | 1.9 UJ | 1.8 UJ | R |
| METALS | SODIUM | MG/KG | 966 UJ | 737 UJ | 734 UJ | 902 UJ | 206 U | 179 U | 318 UJ | 1400 J | 621 UJ | 681 UJ | 530 UJ | 704 UJ | 689 UJ | 694 UJ | 139 U | 1190 UJ | 870 UJ | 748 UJ | 724 UJ | R |
| METALS | THALLIUM | MG/KG | 12.8 UJ | 9.8 UJ | 9.7 UJ | 12 UJ | 2.7 U | 2.4 U | 4.2 UJ | 7.5 UJ | 8.2 UJ | 9 UJ | 7 UJ | 9.3 UJ | 8.7 UJ | 8.8 UJ | 1.8 UJ | 15 UJ | 11 UJ | 9.4 UJ | 9.2 UJ | R |
| METALS | VANADIUM | MG/KG | 78.8 J | 68.6 J | 75.5 J | 74.6 J | 7.1 J | 5.4 J | 10.2 J | 60.4 J | 71.3 J | 38.8 J | 31.6 J | 53.9 J | 35.6 J | 25.8 J | 2 J | 37.8 J | 57.7 J | 39.8 J | 50.5 J | 52.3 J |
| METALS | ZINC | MG/KG | 2430 J | 2540 J | 2400 J | 1940 J | 125 J | 62.8 J | 211 J | 1820 J | 1910 J | 1160 J | 525 J | 683 J | 303 J | 666 J | 10.9 | 595 J | 703 J | 1210 J | 1210 J | 802 J |
| PEST/PCB | 4,4'-DDD | MG/KG | 0.018 J | 0.047 J | 0.038 J | 0.019 J | 0.006 U | 0.006 U | 0.0053 J | 0.05 J | 0.081 J | 0.025 J | 0.0099 J | 0.022 J | 0.049 J | 0.021 UJ | 0.004 U | 0.03 UJ | 0.037 J | 0.018 J | 0.063 J | R |
| PEST/PCB | 4,4'-DDE | MG/KG | 0.034 J | 0.05 J | 0.068 J | 0.034 J | 0.006 U | 0.006 U | 0.01 UJ | 0.081 J | 0.11 J | 0.026 J | 0.01 J | 0.016 J | 0.021 J | 0.021 UJ | 0.004 U | 0.03 UJ | 0.031 J | 0.01 J | 0.062 J | R |
| PEST/PCB | 4,4'-DDT | MG/KG | 0.025 UJ | 0.021 UJ | 0.024 UJ | 0.025 UJ | 0.006 U | 0.006 U | 0.01 UJ | 0.017 UJ | 0.019 UJ | 0.022 UJ | 0.016 UJ | 0.024 UJ | 0.022 UJ | 0.021 UJ | 0.004 U | 0.03 UJ | 0.027 UJ | 0.019 UJ | 0.024 UJ | R |
| PEST/PCB | ALDRIN | MG/KG | 0.013 UJ | 0.011 UJ | 0.012 UJ | 0.013 UJ | 0.0031 U | 0.0031 U | 0.0053 UJ | 0.0089 UJ | 0.01 UJ | 0.011 UJ | 0.0081 UJ | 0.012 UJ | 0.011 UJ | 0.011 UJ | 0.002 U | 0.015 UJ | 0.014 UJ | 0.01 UJ | 0.012 UJ | R |
| PEST/PCB | ALPHA-BHC | MG/KG | 0.013 UJ | 0.011 UJ | 0.012 UJ | 0.013 UJ | 0.0031 U | 0.0031 U | 0.0053 UJ | 0.0089 UJ | 0.01 UJ | 0.011 UJ | 0.0081 UJ | 0.012 UJ | 0.011 UJ | 0.011 UJ | 0.002 U | 0.015 UJ | 0.014 UJ | 0.01 UJ | 0.012 UJ | R |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | 0.013 UJ | 0.011 UJ | 0.012 UJ | 0.013 UJ | 0.0031 U | 0.0031 U | 0.0053 UJ | 0.0089 UJ | 0.01 UJ | 0.011 UJ | 0.0081 UJ | 0.012 UJ | 0.011 UJ | 0.011 UJ | 0.002 U | 0.015 UJ | 0.014 UJ | 0.01 UJ | 0.012 UJ | R |
| PEST/PCB | AROCLOR-1016 | MG/KG | 0.25 UJ | 0.21 UJ | 0.24 UJ | 0.25 UJ | 0.06 U | 0.06 U | 0.1 UJ | 0.17 UJ | 0.19 UJ | 0.22 UJ | 0.16 UJ | 0.24 UJ | 0.22 UJ | 0.21 UJ | 0.04 U | 0.3 UJ | 0.27 UJ | 0.19 UJ | 0.24 UJ | R |
| PEST/PCB | AROCLOR-1221 | MG/KG | 0.51 UJ | 0.42 UJ | 0.48 UJ | 0.51 UJ | 0.12 U | 0.12 U | 0.21 UJ | 0.35 UJ | 0.39 UJ | 0.45 UJ | 0.32 UJ | 0.48 UJ | 0.45 UJ | 0.42 UJ | 0.081 U | 0.61 UJ | 0.56 UJ | 0.39 UJ | 0.48 UJ | R |
| PEST/PCB | AROCLOR-1232 | MG/KG | 0.25 UJ | 0.21 UJ | 0.24 UJ | 0.25 UJ | 0.06 U | 0.06 U | 0.1 UJ | 0.17 UJ | 0.19 UJ | 0.22 UJ | 0.16 UJ | 0.24 UJ | 0.22 UJ | 0.21 UJ | 0.04 U | 0.3 UJ | 0.27 UJ | 0.19 UJ | 0.24 UJ | R |
| PEST/PCB | AROCLOR-1242 | MG/KG | 0.25 UJ | 0.21 UJ | 0.24 UJ | 0.25 UJ | 0.06 U | 0.06 U | 0.1 UJ | 0.17 UJ | 0.19 UJ | 0.22 UJ | 0.16 UJ | 0.24 UJ | 0.22 UJ | 0.21 UJ | 0.04 U | 0.3 UJ | 0.27 UJ | 0.19 UJ | 0.24 UJ | R |
| PEST/PCB | AROCLOR-1248 | MG/KG | 0.25 UJ | 0.21 UJ | 0.24 UJ | 0.25 UJ | 0.06 U | 0.06 U | 0.1 UJ | 0.17 UJ | 0.19 UJ | 0.22 UJ | 0.16 UJ | 0.24 UJ | 0.22 UJ | 0.21 UJ | 0.04 U | 0.3 UJ | 0.27 UJ | 0.19 UJ | 0.24 UJ | R |
| PEST/PCB | AROCLOR-1254 | MG/KG | 0.25 UJ | 0.21 UJ | 0.24 UJ | 0.25 UJ | 0.06 U | 0.06 U | 0.1 UJ | 0.17 UJ | 0.29 J | 0.22 UJ | 0.16 UJ | 0.24 UJ | 0.22 UJ | 0.21 UJ | 0.04 U | 0.3 UJ | 0.27 UJ | 0.19 UJ | 0.24 UJ | R |
| PEST/PCB | AROCLOR-1260 | MG/KG | 0.25 UJ | 0.21 UJ | 0.13 J | 0.25 UJ | 0.06 U | 0.06 U | 0.1 UJ | 0.12 J | 0.17 J | 0.22 UJ | 0.16 UJ | 0.24 UJ | 0.22 UJ | 0.21 UJ | 0.04 U | 0.3 UJ | 0.27 UJ | 0.19 UJ | 0.24 UJ | R |
| PEST/PCB | AROCLOR-1262 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1268 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | BETA-BHC | MG/KG | R | R | 0.012 UJ | R | 0.0025 J | 0.0031 U | 0.0053 UJ | 0.0089 UJ | 0.01 UJ | R | 0.0047 J | 0.012 UJ | 0.011 UJ | 0.011 UJ | 0.002 U | 0.015 UJ | 0.014 UJ | 0.01 UJ | 0.012 UJ | R |
| PEST/PCB | DELTA-BHC | MG/KG | 0.013 UJ | 0.011 UJ | 0.012 UJ | 0.013 UJ | 0.0031 U | 0.0031 U | 0.0053 UJ | 0.0089 UJ | 0.01 UJ | 0.011 UJ | 0.0081 UJ | 0.012 UJ | 0.011 UJ | 0.011 UJ | 0.002 U | 0.015 UJ | 0.014 UJ | 0.01 UJ | 0.012 UJ | R |
| PEST/PCB | DIELDRIN | MG/KG | 0.025 UJ | 0.021 UJ | 0.024 UJ | 0.025 UJ | 0.006 U | 0.006 U | 0.01 UJ | 0.017 UJ | 0.019 UJ | 0.022 UJ | 0.016 UJ | 0.024 UJ | 0.022 UJ | 0.021 UJ | 0.004 U | 0.03 UJ | 0.027 UJ | 0.019 UJ | 0.024 UJ | R |
| PEST/PCB | ENDOSULFAN I | MG/KG | 0.013 UJ | 0.011 UJ | 0.012 UJ | 0.013 UJ | 0.0031 U | 0.0031 U | 0.0053 UJ | 0.0089 UJ | 0.01 UJ | 0.011 UJ | 0.0081 UJ | 0.012 UJ | 0.011 UJ | 0.011 UJ | 0.002 U | 0.015 UJ | 0.014 UJ | 0.01 UJ | 0.012 UJ | R |
| PEST/PCB | ENDOSULFAN II | MG/KG | 0.025 UJ | 0.021 UJ | 0.024 UJ | 0.025 UJ | 0.006 U | 0.006 U | 0.01 UJ | 0.017 UJ | 0.019 UJ | 0.022 UJ | 0.016 UJ | 0.024 UJ | 0.022 UJ | 0.021 UJ | 0.004 U | 0.03 UJ | 0.027 UJ | 0.019 UJ | 0.024 UJ | R |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | 0.025 UJ | 0.021 UJ | 0.024 UJ | 0.025 UJ | 0.006 U | 0.006 U | 0.01 UJ | 0.017 UJ | 0.019 UJ | 0.022 UJ | 0.016 UJ | 0.024 UJ | 0.022 UJ | 0.021 UJ | 0.004 U | 0.03 UJ | 0.027 UJ | 0.019 UJ | 0.024 UJ | R |
| PEST/PCB | ENDRIN | MG/KG | 0.025 UJ | 0.021 UJ | 0.024 UJ | 0.025 UJ | 0.006 U | 0.006 U | 0.01 UJ | 0.017 UJ | 0.019 UJ | 0.022 UJ | 0.016 UJ | 0.024 UJ | 0.022 UJ | 0.021 UJ | 0.004 U | 0.03 UJ | 0.027 UJ | 0.019 UJ | 0.024 UJ | R |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | 0.025 UJ | 0.021 UJ | 0.024 UJ | 0.025 UJ | 0.006 U | 0.006 U | 0.01 UJ | 0.017 UJ | 0.019 UJ | 0.022 UJ | 0.016 UJ | 0.024 UJ | 0.022 UJ | 0.021 UJ | 0.004 U | 0.03 UJ | 0.027 UJ | 0.019 UJ | 0.024 UJ | R |
| PEST/PCB | ENDRIN KETONE | MG/KG | 0.025 UJ | 0.021 UJ | 0.024 UJ | 0.025 UJ | 0.006 U | 0.006 U | 0.01 UJ | 0.017 UJ | 0.019 UJ | 0.022 UJ | 0.016 UJ | 0.024 UJ | 0.022 UJ | 0.021 UJ | 0.004 U | 0.03 UJ | 0.027 UJ | 0.019 UJ | 0.024 UJ | R |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | 0.013 UJ | 0.009 J | 0.0079 J | 0.019 J | 0.0031 U | 0.0031 U | 0.0053 UJ | 0.0089 UJ | 0.0077 J | 0.016 J | 0.0081 UJ | 0.012 UJ | 0.011 UJ | 0.011 UJ | 0.002 U | 0.015 UJ | 0.014 UJ | 0.01 UJ | 0.012 UJ | R |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | 0.013 UJ | 0.0054 J | 0.012 UJ | 0.013 UJ | 0.0031 U | 0.0031 U | 0.0053 UJ | 0.0089 UJ | 0.0077 UJ | 0.011 UJ | 0.0081 UJ | 0.012 UJ | 0.011 UJ | 0.011 UJ | 0.002 U | 0.015 UJ | 0.014 UJ | 0.01 UJ | 0.012 UJ | R |
| PEST/PCB | HEPTACHLOR | MG/KG | 0.013 UJ | 0.011 UJ | 0.012 UJ | 0.013 UJ | 0.0031 U | 0.0031 U | 0.0053 UJ | 0.0089 UJ | 0.01 UJ | 0.011 UJ | 0.0081 UJ | 0.012 UJ | 0.011 UJ | 0.011 UJ | 0.002 U | 0.015 UJ | 0.014 UJ | 0.01 UJ | 0.012 UJ | R |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | 0.013 UJ | 0.011 UJ | 0.0072 J | 0.013 UJ | 0.0031 U | 0.0031 U | 0.0053 UJ | 0.0089 UJ | 0.01 UJ | 0.011 UJ | 0.0081 UJ | 0.012 UJ | 0.011 UJ | 0.011 UJ | 0.002 U | 0.015 UJ | 0.014 UJ | 0.01 UJ | 0.0084 J | R |
| PEST/PCB | METHOXYCHLOR | MG/KG | 0.13 UJ | 0.11 UJ | 0.12 UJ | 0.13 UJ | 0.031 U | 0.031 U | 0.053 UJ | 0.089 UJ | 0.1 UJ | 0.11 UJ | 0.081 UJ | 0.12 UJ | 0.11 UJ | 0.11 UJ | 0.02 U | 0.15 UJ | 0.14 UJ | 0.1 UJ | 0.12 UJ | R |
| PEST/PCB | TOXAPHENE | MG/KG | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 0.31 U | 0.31 U | 0.53 UJ | 0.89 UJ | 1 UJ | 1.1 UJ | 0.81 UJ | 1.2 UJ | 1.1 UJ | 1.1 UJ | 0.2 U | 1.5 UJ | 1.4 UJ | 1 UJ | 1.2 UJ | R |
| SVOC | 1,1'-BIPHENYL | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | 1,2,4,5-TETRACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 UJ | 0.6 UJ | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 UJ | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | 2,3,4,6-TETRACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | 6.4 UJ | 5.2 UJ | 5.9 UJ | 6.4 UJ | 1.5 U | 1.5 U | 2.6 UJ | 4.4 UJ | 4.9 UJ | 5.5 UJ | 4 UJ | 5.9 UJ | 5.5 UJ | 5.2 UJ | 1 U | 7.5 UJ | 6.9 UJ | 4.9 UJ | 5.9 UJ | R |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | 2,4-DINITROPHENOL | MG/KG | 6.4 UJ | 5.2 UJ | 5.9 UJ | 6.4 UJ | 1.5 U | 1.5 U | 2.6 UJ | 4.4 UJ | 4.9 UJ | 5.5 UJ | 4 UJ | 5.9 UJ | 5.5 UJ | 5.2 UJ | 1 U | 7.5 UJ | 6.9 UJ | 4.9 UJ | 5.9 UJ | R |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | 2-CHLOROPHENOL | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | 2-METHYLPHENOL | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | 2-NITROANILINE | MG/KG | 6.4 UJ | 5.2 UJ | 5.9 UJ | 6.4 UJ | 1.5 U | 1.5 U | 2.6 UJ | 4.4 UJ | 4.9 UJ | 5.5 UJ | 4 UJ | 5.9 UJ | 5.5 UJ | 5.2 UJ | 1 U | 7.5 UJ | 6.9 UJ | 4.9 UJ | 5.9 UJ | R |
| SVOC | 2-NITROPHENOL | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | 3-NITROANILINE | MG/KG | 6.4 UJ | 5.2 UJ | 5.9 UJ | 6.4 UJ | 1.5 U | 1.5 U | 2.6 UJ | 4.4 UJ | 4.9 UJ | 5.5 UJ | 4 UJ | 5.9 UJ | 5.5 UJ | 5.2 UJ | 1 U | 7.5 UJ | 6.9 UJ | 4.9 UJ | 5.9 UJ | R |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | 6.4 UJ | 5.2 UJ | 5.9 UJ | 6.4 UJ | 1.5 U | 1.5 U | 2.6 UJ | 4.4 UJ | 4.9 UJ | 5.5 UJ | 4 UJ | 5.9 UJ | 5.5 UJ | 5.2 UJ | 1 U | 7.5 UJ | 6.9 UJ | 4.9 UJ | 5.9 UJ | R |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | 4-CHLOROANILINE | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | 4-METHYLPHENOL | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | 4-NITROANILINE | MG/KG | 6.4 UJ | 5.2 UJ | 5.9 UJ | 6.4 UJ | 1.5 U | 1.5 U | 2.6 UJ | 4.4 UJ | 4.9 UJ | 5.5 UJ | 4 UJ | 5.9 UJ | 5.5 UJ | 5.2 UJ | 1 U | 7.5 UJ | 6.9 UJ | 4.9 UJ | 5.9 UJ | R |
| SVOC | 4-NITROPHENOL | MG/KG | 6.4 UJ | 5.2 UJ | 5.9 UJ | 6.4 UJ | 1.5 U | 1.5 U | 2.6 UJ | 4.4 UJ | 4.9 UJ | 5.5 UJ | 4 UJ | 5.9 UJ | 5.5 UJ | 5.2 UJ | 1 U | 7.5 UJ | 6.9 UJ | 4.9 UJ | 5.9 UJ | R |
| SVOC | ACENAPHTHENE | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | ACENAPHTHYLENE | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | ACETOPHENONE | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | ANTHRACENE | MG/KG | 0.12 J | 0.12 J | 0.11 J | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 0.16 J | 0.12 J | 2.2 UJ | 1.6 UJ | 2.4 UJ | 0.16 J | 2 UJ | 0.4 U | 3 UJ | 0.18 J | 0.14 J | 2.4 UJ | R |
| SVOC | ATRAZINE | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | BENZALDEHYDE | MG/KG | 2.5 UJ | 0.44 J | 2.4 UJ | 0.54 J | 0.085 J | 0.6 UJ | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 UJ | 3 UJ | 0.28 J | 0.43 J | 0.46 J | R |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.55 J | 0.55 J | 0.46 J | 0.38 J | 0.061 J | 0.098 J | 0.098 J | 0.83 J | 0.71 J | 0.35 J | 0.26 J | 0.46 J | 0.71 J | 0.23 J | 0.4 U | 0.46 J | 0.55 J | 0.39 J | 0.45 J | 0.26 J |
| SVOC | BENZO(A)PYRENE | MG/KG | 0.8 J | 0.67 J | 0.64 J | 0.56 J | 0.089 J | 0.11 J | 0.13 J | 1.1 J | 1 J | 0.57 J | 0.35 J | 0.56 J | 0.91 J | 0.38 J | 0.4 U | 0.75 J | 0.7 J | 0.54 J | 0.58 J | 0.28 J |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 0.86 J | 0.71 J | 0.85 J | 0.66 J | 0.14 J | 0.12 J | 0.21 J | 1.5 J | 1.2 J | 0.88 J | 0.4 J | 0.65 J | 1.3 J | 0.64 J | 0.4 U | 1.1 J | 0.99 J | 0.65 J | 0.54 J | 0.44 J |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.39 J | 0.32 J | 0.34 J | 0.3 J | 0.065 J | 0.078 J | 0.14 J | 0.47 J | 0.56 J | 0.3 J | 0.24 J | 0.3 J | 0.48 J | 2 UJ | 0.4 U | 3 UJ | 0.47 J | 0.38 J | 0.44 J | R |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.98 J | 0.82 J | 0.64 J | 0.68 J | 0.074 J | 0.11 J | 0.18 J | 0.96 J | 1.3 J | 0.55 J | 0.5 J | 0.7 J | 1.3 J | 0.46 J | 0.4 U | 0.68 J | 0.64 J | 0.61 J | 0.7 J | 0.37 J |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | BWDD0018 | BWDD0019 | BWDD0020 | BWDD0021 | BWDD0022 | BWDD0023 | BWDD0024 | BWDD0025 | BWDD0026 | BWDD0027 | BWDD0028 | BWDD0029 | BWDD0030 | BWDD0031 | BWDD0032 | BWDD0033 | BWDD0033 | BWDD0034 | BWDD0035 | BWDD0036 |
| | | Field Sample ID | BWDD0018-SD-AA-AB-0 | BWDD0019-SD-AA-AB-0 | BWDD0020-SD-AA-AB-0 | BWDD0021-SD-AA-AB-0 | BWDD0022-SD-AA-AB-0 | BWDD0023-SD-AA-AB-0 | BWDD0024-SD-AA-AB-0 | BWDD0025-SD-AA-AB-0 | BWDD0026-SD-AA-AB-0 | BWDD0027-SD-AA-AB-0 | BWDD0028-SD-AA-AB-0 | BWDD0029-SD-AA-AB-0 | BWDD0030-SD-AA-AB-0 | BWDD0031-SD-AA-AB-0 | BWDD0032-SD-AA-AB-0 | BWDD0033-SD-AA-AB-0 | BWDD0033-SD-AA-AB-1 | BWDD0034-SD-AA-AB-0 | BWDD0035-SD-AA-AB-0 | BWDD0036-SD-AA-AB-0 |
| | | Sample Date | 7/14/05 | 7/18/05 | 7/18/05 | 7/18/05 | 7/18/05 | 7/18/05 | 7/18/05 | 7/18/05 | 7/18/05 | 7/18/05 | 7/18/05 | 7/18/05 | 7/19/05 | 7/19/05 | 7/19/05 | 7/19/05 | 7/19/05 | 7/19/05 | 7/19/05 | 7/19/05 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | 2.5 UJ | 0.58 J | 0.5 J | 0.45 J | 0.086 J | 0.09 J | 0.63 J | 0.58 J | 0.79 J | 0.67 J | 0.41 J | 2.4 UJ | 0.28 J | 2 UJ | 0.028 J | 0.86 J | 0.54 J | 0.81 J | 0.48 J | 0.34 J |
| SVOC | CAPROLACTAM | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | CARBAZOLE | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 0.1 J | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | CHRYSENE | MG/KG | 0.94 J | 0.88 J | 0.84 J | 0.66 J | 0.11 J | 0.12 J | 0.18 J | 1.4 J | 1.2 J | 0.69 J | 0.42 J | 0.7 J | 1.4 J | 0.43 J | 0.4 U | 0.8 J | 0.87 J | 0.66 J | 0.76 J | 0.44 J |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.18 J | 2.1 UJ | 0.14 J | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 0.12 J | 0.14 J | 0.11 J | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | DIBENZOFURAN | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | DIETHYLPHTHALATE | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | DIMETHYLPHTHALATE | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 0.13 J | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 0.8 J | 2.4 UJ | R |
| SVOC | FLUORANTHENE | MG/KG | 1.3 J | 1.3 J | 1 J | 0.93 J | 0.15 J | 0.21 J | 0.26 J | 2.1 J | 1.4 J | 0.92 J | 0.6 J | 1.2 J | 1.9 J | 0.73 J | 0.4 U | 1.2 J | 1.1 J | 0.98 J | 0.92 J | 0.6 J |
| SVOC | FLUORENE | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | HEXACHLOROBENZENE | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 UJ | 0.6 UJ | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 UJ | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 UJ | 0.6 UJ | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 UJ | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | HEXACHLOROETHANE | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.34 J | 0.31 J | 0.3 J | 0.24 J | 0.052 J | 0.053 J | 0.088 J | 0.48 J | 0.47 J | 0.26 J | 0.16 J | 0.23 J | 0.36 J | 0.18 J | 0.4 U | 3 UJ | 0.4 J | 0.34 J | 0.34 J | R |
| SVOC | ISOPHORONE | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 UJ | 0.6 UJ | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 UJ | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | NAPHTHALENE | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 25 J | 0.17 J | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | NITROBENZENE | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 UJ | 0.6 UJ | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 UJ | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | PENTACHLOROPHENOL | MG/KG | 6.4 UJ | 5.2 UJ | 5.9 UJ | 6.4 UJ | 1.5 U | 1.5 U | 2.6 UJ | 4.4 UJ | 4.9 UJ | 5.5 UJ | 4 UJ | 5.9 UJ | 5.5 UJ | 5.2 UJ | 1 U | 7.5 UJ | 6.9 UJ | 4.9 UJ | 5.9 UJ | R |
| SVOC | PHENANTHRENE | MG/KG | 0.67 J | 0.6 J | 0.45 J | 0.38 J | 0.051 J | 0.07 J | 0.086 J | 0.92 J | 0.77 J | 0.38 J | 0.19 J | 0.53 J | 0.87 J | 0.3 J | 0.4 U | 0.48 J | 0.54 J | 0.46 J | 0.5 J | 0.21 J |
| SVOC | PHENOL | MG/KG | 2.5 UJ | 2.1 UJ | 2.4 UJ | 2.5 UJ | 0.6 U | 0.6 U | 1 UJ | 1.7 UJ | 1.9 UJ | 2.2 UJ | 1.6 UJ | 2.4 UJ | 2.2 UJ | 2 UJ | 0.4 U | 3 UJ | 2.7 UJ | 1.9 UJ | 2.4 UJ | R |
| SVOC | PYRENE | MG/KG | 1.5 J | 1.4 J | 1.2 J | 1.1 J | 0.15 J | 0.21 J | 0.26 J | 2 J | 1.8 J | 1.1 J | 0.6 J | 1.2 J | 1.7 J | 0.6 J | 0.4 U | 1.2 J | 1.5 J | 1.2 J | 1.3 J | 0.7 J |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | 1,1-DICHLOROETHANE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | 1,1-DICHLOROETHENE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | 1,2,3-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | 1,2-DIBROMOETHANE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | 0.18 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | 1,2-DICHLOROETHANE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | 0.18 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | 0.18 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | 1,4-DIOXANE (P-DIOXANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 UJ | 0.017 UJ | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 UJ | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | ACETONE | MG/KG | 0.56 J | 0.14 UJ | 0.18 UJ | 0.66 J | 0.016 UJ | 0.019 UJ | 0.19 J | 0.14 UJ | 0.23 J | 0.15 UJ | 0.093 UJ | 0.17 UJ | 0.28 J | 0.47 J | 0.024 UJ | 0.36 UJ | 0.46 J | 0.31 UJ | 0.38 J | 0.42 UJ |
| VOC | BENZENE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | BROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | BROMOFORM | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | BROMOMETHANE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | CARBON DISULFIDE | MG/KG | 0.026 J | 0.14 UJ | 0.13 UJ | 0.018 J | 0.016 U | 0.017 U | 0.056 UJ | 0.011 J | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.032 J | 0.16 UJ | 0.13 UJ | 0.014 J | R |
| VOC | CARBON TETRACHLORIDE | MG/KG | 0.18 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | CHLOROBENZENE | MG/KG | 0.18 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | CHLOROETHANE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | CHLOROFORM | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | CHLOROMETHANE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | CYCLOHEXANE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 UJ | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | DICHLOROMETHANE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | ETHYLBENZENE | MG/KG | 0.18 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | ISOPROPYLBENZENE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | METHYL ACETATE | MG/KG | 0.18 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.012 J | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.016 J | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | METHYL ETHYL KETONE | MG/KG | 0.18 J | 0.038 J | 0.053 J | 0.2 J | 0.016 UJ | 0.006 J | 0.049 J | 0.036 J | 0.071 J | 0.04 J | 0.025 J | 0.046 J | 0.1 J | 0.16 J | 0.007 J | 0.083 J | 0.11 J | 0.093 J | 0.12 J | R |
| VOC | METHYLCYCLOHEXANE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.046 J | 0.12 UJ | R |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | STYRENE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | TETRACHLOROETHENE | MG/KG | 0.18 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | TOLUENE | MG/KG | 0.18 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.001 J | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | 0.18 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | VINYL CHLORIDE | MG/KG | 0.16 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |
| VOC | XYLENE, O- | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES, M & P | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | 0.18 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.016 U | 0.017 U | 0.056 UJ | 0.079 UJ | 0.092 UJ | 0.12 UJ | 0.072 UJ | 0.12 UJ | 0.1 UJ | 0.12 UJ | 0.01 U | 0.2 UJ | 0.16 UJ | 0.13 UJ | 0.12 UJ | R |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | BWDD0037 | BWDD0037 | BWDD0038 | BWDD0039 | BWDD0040 | BWDD0040 | BWDD0041 | BWDD0042 | BWDD0043 | BWDD0044 | BWDD0044 | BWDD0045 | BWDD0046 | BWDD0047 | BWDD0048 | BWDD0049 | BWDD0050 | BWDD0051 | BWDD0052 | BWDD0053 |
| | | Field Sample ID | BWDD0037-SD-AA-AB-0 | BWDD0037-SD-AA-AB-0 | BWDD0038-SD-AA-AB-0 | BWDD0039-SD-AA-AB-0 | BWDD0040-SD-AA-AB-0 | BWDD0040-SD-AA-AB-0 | BWDD0041-SD-AA-AB-0 | BWDD0042-SD-AA-AB-0 | BWDD0043-SD-AA-AB-0 | BWDD0044-SD-AA-AB-0 | BWDD0044-SD-AA-AB-1 | BWDD0045-SD-AA-AB-0 | BWDD0046-SD-AA-AB-0 | BWDD0047-SD-AA-AB-0 | BWDD0048-SD-AA-AB-0 | BWDD0049-SD-AA-AB-0 | BWDD0050-SD-AA-AB-0 | BWDD0051-SD-AA-AB-0 | BWDD0052-SD-AA-AB-0 | BWDD0053-SD-AA-AB-0 |
| | | Sample Date | 12/18/07 | 7/20/05 | 7/20/05 | 7/20/05 | 12/18/07 | 7/20/05 | 7/20/05 | 7/20/05 | 7/20/05 | 7/26/05 | 7/26/05 | 7/26/05 | 7/27/05 | 7/27/05 | 7/27/05 | 7/27/05 | 8/15/05 | 8/15/05 | 8/15/05 | 12/18/07 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | R | 19900 J | 21100 J | 20500 J | R | 12000 J | 14200 J | 12300 J | 22300 J | 11300 J | 12800 J | 15600 J | 15600 J | 13900 J | 17100 J | 19900 J | 14200 J | 11300 J | 16300 J | R |
| METALS | ANTIMONY | MG/KG | 0.26 U | R | 7.4 J | 7.5 J | 1.9 J | R | 12.4 J | 6.4 J | 6.9 UJ | 6 J | 4.7 UJ | 8.6 J | 12.6 J | 8.3 J | 7.3 UJ | 7 J | 8.5 J | 6.3 UJ | 9.3 UJ | 7.3 J |
| METALS | ARSENIC | MG/KG | 6.8 J | 321 J | 338 J | 284 J | 235 J | 271 J | 287 J | 343 J | 440 J | 182 J | 224 J | 484 J | 232 J | 470 J | 264 J | 401 J | 219 J | 137 J | 265 J | 193 J |
| METALS | BARIUM | MG/KG | 21.5 J | 426 J | 858 J | 785 J | 516 J | 460 J | 119 J | 280 J | 775 J | 512 J | 569 J | 418 J | 153 J | 268 J | 491 J | 813 J | 63.9 J | 335 J | 468 J | 116 J |
| METALS | BERYLLIUM | MG/KG | 0.065 J | 2.4 J | 2.5 J | 2.3 J | 1.7 J | 1.7 J | 0.92 J | 1.4 J | 2.7 J | 1.3 J | 1.3 J | 1.4 J | 1.6 J | 1.3 J | 1.7 J | 2.1 J | 1.5 J | 1.4 J | 1.5 J | 0.98 J |
| METALS | CADMIUM | MG/KG | 0.58 J | 20.2 J | 21.6 J | 23.2 J | 16.1 J | 9.1 J | 6.6 J | 6.9 J | 16.1 J | 8.6 J | 9.5 J | 18.2 J | 16.4 J | 9.7 J | 8.5 J | 10.5 J | 17.9 J | 9.3 J | 12.5 J | 16.9 J |
| METALS | CALCIUM | MG/KG | 172 J | 7310 J | 8600 J | 5620 J | 4920 J | 1720 J | 397 J | 3960 J | 6780 J | 5620 J | 6550 J | 5270 J | 7570 J | 5330 J | 8850 J | 6390 J | 7660 J | 5280 J | 9850 J | 11300 J |
| METALS | CHROMIUM | MG/KG | 6.4 | 96.8 J | 199 J | 156 J | 116 J | 59.7 J | 190 J | 64.1 J | 152 J | 75 J | 85.2 J | 155 J | 164 J | 198 J | 125 J | 147 J | 196 J | 70.9 J | 136 J | 154 J |
| METALS | COBALT | MG/KG | 0.58 J | 21.5 J | 18.2 J | 16.1 J | 19 J | 13 J | 4.3 J | 7 J | 16 J | 7.2 J | 7 J | 11.5 J | 9 J | 9.3 J | 9.2 J | 16.2 J | 11.4 J | 6.8 J | 11.2 J | 6.7 J |
| METALS | COPPER | MG/KG | 6.7 | 138 J | 185 J | 150 J | 98.5 J | 71.2 J | 227 J | 63.7 J | 105 J | 67.1 J | 74.6 J | 173 J | 198 J | 171 J | 92.8 J | 108 J | 171 J | 64.9 J | 124 J | 192 J |
| METALS | CYANIDE | MG/KG | 0.67 U | R | 12.4 J | 11.7 J | 13.9 J | R | 2.6 UJ | 6.7 J | 11.1 J | R | R | R | 2.9 UJ | R | R | R | 2.4 UJ | 2 UJ | 3.5 UJ | R |
| METALS | IRON | MG/KG | 2280 | 119000 J | 54800 J | 46600 J | 53900 J | 33400 J | 12600 J | 16300 J | 91500 J | 44800 J | 51600 J | 62300 J | 26400 J | 85400 J | 80600 J | 97600 J | 30400 J | 28900 J | 42700 J | 32100 J |
| METALS | LEAD | MG/KG | 103 | 1200 J | 2170 J | 1760 J | 1030 J | 713 J | 1970 J | 693 J | 1210 J | 703 J | 804 J | 1560 J | 1890 J | 2110 J | 1180 J | 1360 J | 2040 J | 645 J | 1420 J | 1730 J |
| METALS | MAGNESIUM | MG/KG | 37.7 J | 1680 J | 1160 J | 938 J | 935 J | 682 J | 432 J | 408 J | 1110 J | 744 J | 888 J | 826 J | 653 J | 795 J | 1700 J | 1210 J | 671 J | 591 J | 1170 J | 889 J |
| METALS | MANGANESE | MG/KG | 6.4 | 180 J | 117 J | 69.8 J | 154 J | 52.2 J | 18.4 J | 232 J | 384 J | 115 J | 140 J | 151 J | 39 J | 107 J | 321 J | 569 J | 22 J | 48.6 J | 104 J | 31.5 J |
| METALS | MERCURY | MG/KG | 0.074 U | R | 0.58 J | 0.6 J | 0.72 J | R | 0.59 J | 0.25 UJ | 0.5 J | 0.21 UJ | 0.27 J | 0.58 J | 0.8 J | 0.51 J | 0.36 J | 0.44 J | 0.98 J | 0.34 J | 0.82 J | 0.96 J |
| METALS | NICKEL | MG/KG | 1.5 J | 37.6 J | 35.9 J | 32.4 J | 37.3 J | 19.3 J | 13.5 J | 15.5 J | 36.4 J | 20.6 J | 21.7 J | 24.6 J | 25.6 J | 14 J | 20.6 J | 27.5 J | 23.9 J | 17.3 J | 25.7 J | 28.1 J |
| METALS | POTASSIUM | MG/KG | 44.8 J | R | 421 UJ | 446 UJ | 336 J | R | 548 UJ | 377 UJ | 479 UJ | 769 UJ | 758 UJ | 1180 UJ | 1500 UJ | 741 UJ | 1180 UJ | 1120 UJ | 438 UJ | 436 UJ | 643 UJ | 520 J |
| METALS | SELENIUM | MG/KG | 0.29 U | 13.7 J | 4.9 UJ | 5.2 UJ | 2.3 J | R | 6.4 UJ | 4.4 UJ | 5.6 UJ | 3.8 UJ | 3.8 UJ | 5.9 UJ | 7.5 UJ | 3.7 UJ | 5.9 UJ | 5.6 UJ | 5.2 UJ | 5.1 UJ | 7.6 UJ | R |
| METALS | SILVER | MG/KG | 0.093 UJ | R | 1.8 UJ | 1.9 UJ | R | R | 2.3 UJ | 1.6 UJ | 2 UJ | 1.4 UJ | 1.4 UJ | 2.1 UJ | 3.4 UJ | 1.7 UJ | 2.6 UJ | 2.5 UJ | 1.9 UJ | 1.9 UJ | 2.7 UJ | R |
| METALS | SODIUM | MG/KG | 6.9 J | R | 707 UJ | 750 UJ | 307 J | R | 921 UJ | 635 UJ | 3410 J | 2410 J | 2800 J | 1350 J | 1020 UJ | 504 UJ | 805 UJ | 1850 J | 737 UJ | 733 UJ | 1080 UJ | 134 J |
| METALS | THALLIUM | MG/KG | 0.16 U | R | 8.9 UJ | 9.5 UJ | R | R | 11.6 UJ | 8 UJ | 10.2 UJ | 4.9 UJ | 4.8 UJ | 7.5 UJ | 13.6 UJ | 6.7 UJ | 10.7 UJ | 10.1 UJ | 6.6 UJ | 6.5 UJ | 9.6 UJ | R |
| METALS | VANADIUM | MG/KG | 3.9 J | 71.1 J | 68.8 J | 64.9 J | 55.2 J | 40.5 J | 64.2 J | 48 J | 64.9 J | 33.5 J | 39 J | 49.6 J | 59.8 J | 57.5 J | 59.4 J | 70.3 J | 49.4 J | 33.3 J | 59.6 J | 59.6 J |
| METALS | ZINC | MG/KG | 58.9 | 1760 J | 1850 J | 1580 J | 1510 J | 653 J | 291 J | 852 J | 1520 J | 982 J | 1000 J | 1270 J | 1420 J | 1080 J | 1020 J | 1280 J | 1620 J | 780 J | 1130 J | 1590 J |
| PEST/PCB | 4,4'-DDD | MG/KG | | R | 0.034 J | 0.038 J | | R | 0.027 J | 0.019 UJ | 0.017 J | 0.039 J | 0.036 J | 0.031 J | 0.035 J | 0.078 J | 0.066 J | 0.04 J | 0.071 J | 0.041 J | 0.066 J | |
| PEST/PCB | 4,4'-DDE | MG/KG | | R | 0.023 J | 0.029 J | | R | 0.03 J | 0.019 UJ | 0.013 J | 0.02 J | 0.021 J | 0.024 J | 0.059 J | 0.065 J | 0.035 J | 0.027 J | 0.14 J | 0.022 J | 0.045 J | |
| PEST/PCB | 4,4'-DDT | MG/KG | | R | 0.021 UJ | 0.022 UJ | | R | 0.025 UJ | 0.019 UJ | 0.015 J | 0.016 J | 0.017 J | 0.012 J | 0.028 UJ | 0.015 UJ | 0.022 UJ | 0.021 UJ | 0.018 UJ | 0.013 J | 0.027 UJ | |
| PEST/PCB | ALDRIN | MG/KG | | R | 0.011 UJ | 0.011 UJ | | R | 0.013 UJ | 0.01 UJ | 0.012 UJ | 0.0074 UJ | 0.0081 UJ | 0.011 UJ | 0.014 UJ | 0.0077 UJ | 0.011 UJ | 0.011 UJ | 0.01 UJ | 0.011 UJ | 0.014 UJ | |
| PEST/PCB | ALPHA-BHC | MG/KG | | R | 0.011 UJ | 0.011 UJ | | R | 0.013 UJ | 0.01 UJ | 0.012 UJ | 0.0074 UJ | 0.0081 UJ | 0.011 UJ | 0.014 UJ | 0.0077 UJ | 0.011 UJ | 0.011 UJ | 0.01 UJ | 0.011 UJ | 0.014 UJ | |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | | R | 0.011 UJ | 0.011 UJ | | R | 0.013 UJ | 0.01 UJ | 0.012 UJ | 0.0075 J | 0.041 J | 0.011 UJ | 0.014 UJ | 0.0053 J | 0.011 J | 0.007 J | 0.01 UJ | 0.0054 J | 0.0085 UJ | |
| PEST/PCB | AROCLOR-1016 | MG/KG | | R | 0.21 UJ | 0.22 UJ | | R | 0.25 UJ | 0.19 UJ | 0.24 UJ | 0.14 UJ | 0.16 UJ | 0.22 UJ | 0.28 UJ | 0.15 UJ | 0.22 UJ | 0.21 UJ | 0.19 UJ | 0.21 UJ | 0.27 UJ | |
| PEST/PCB | AROCLOR-1221 | MG/KG | | R | 0.42 UJ | 0.45 UJ | | R | 0.52 UJ | 0.39 UJ | 0.48 UJ | 0.29 UJ | 0.32 UJ | 0.45 UJ | 0.56 UJ | 0.3 UJ | 0.45 UJ | 0.42 UJ | 0.39 UJ | 0.42 UJ | 0.56 UJ | |
| PEST/PCB | AROCLOR-1232 | MG/KG | | R | 0.21 UJ | 0.22 UJ | | R | 0.25 UJ | 0.19 UJ | 0.24 UJ | 0.14 UJ | 0.16 UJ | 0.22 UJ | 0.28 UJ | 0.15 UJ | 0.22 UJ | 0.21 UJ | 0.19 UJ | 0.21 UJ | 0.27 UJ | |
| PEST/PCB | AROCLOR-1242 | MG/KG | | R | 0.21 UJ | 0.22 UJ | | R | 0.25 UJ | 0.19 UJ | 0.24 UJ | 0.14 UJ | 0.16 UJ | 0.22 UJ | 0.28 UJ | 0.15 UJ | 0.22 UJ | 0.21 UJ | 0.19 UJ | 0.21 UJ | 0.27 UJ | |
| PEST/PCB | AROCLOR-1248 | MG/KG | | R | 0.21 UJ | 0.22 UJ | | R | 0.25 UJ | 0.19 UJ | 0.24 UJ | 0.14 UJ | 0.16 UJ | 0.22 UJ | 0.28 UJ | 0.15 UJ | 0.22 UJ | 0.21 UJ | 0.19 UJ | 0.21 UJ | 0.27 UJ | |
| PEST/PCB | AROCLOR-1254 | MG/KG | | R | 0.21 UJ | 0.22 UJ | | R | 0.25 UJ | 0.19 UJ | 0.24 UJ | 0.56 J | 0.16 UJ | 0.22 UJ | 0.38 J | 0.15 UJ | 0.22 UJ | 0.21 UJ | 0.24 J | 0.21 UJ | 0.27 UJ | |
| PEST/PCB | AROCLOR-1260 | MG/KG | | R | 0.21 UJ | 0.22 UJ | | R | 0.25 UJ | 0.19 UJ | 0.24 UJ | 0.16 J | 0.16 UJ | 0.22 UJ | 0.18 J | 0.15 UJ | 0.22 UJ | 0.21 UJ | 0.15 J | 0.21 UJ | 0.17 J | |
| PEST/PCB | AROCLOR-1262 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1268 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | BETA-BHC | MG/KG | | R | 0.011 UJ | 0.011 UJ | | R | 0.013 UJ | 0.01 UJ | 0.012 UJ | 0.0074 UJ | 0.0081 UJ | 0.011 UJ | 0.014 UJ | R | 0.011 UJ | 0.011 UJ | 0.01 UJ | 0.02 J | 0.014 UJ | |
| PEST/PCB | DELTA-BHC | MG/KG | | R | 0.011 UJ | 0.011 UJ | | R | 0.013 UJ | 0.01 UJ | 0.012 UJ | 0.0074 UJ | 0.0081 UJ | 0.011 UJ | 0.014 UJ | 0.0076 J | 0.011 UJ | 0.011 UJ | 0.01 UJ | 0.011 UJ | 0.014 UJ | |
| PEST/PCB | DIELDRIN | MG/KG | | R | 0.021 UJ | 0.022 UJ | | R | 0.025 UJ | 0.019 UJ | 0.024 UJ | 0.014 UJ | 0.016 UJ | 0.022 UJ | 0.028 UJ | 0.015 UJ | 0.022 UJ | 0.021 UJ | 0.019 UJ | 0.021 UJ | 0.027 UJ | |
| PEST/PCB | ENDOSULFAN I | MG/KG | | R | 0.011 UJ | 0.011 UJ | | R | 0.013 UJ | 0.01 UJ | 0.012 UJ | 0.0074 UJ | 0.0081 UJ | 0.011 UJ | 0.014 UJ | 0.0077 UJ | 0.011 UJ | 0.011 UJ | 0.01 UJ | 0.011 UJ | 0.014 UJ | |
| PEST/PCB | ENDOSULFAN II | MG/KG | | R | 0.021 UJ | 0.022 UJ | | R | 0.025 UJ | 0.019 UJ | 0.024 UJ | 0.014 UJ | 0.016 UJ | 0.022 UJ | 0.028 UJ | 0.015 UJ | 0.022 UJ | 0.021 UJ | 0.019 UJ | 0.021 UJ | 0.027 UJ | |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | | R | 0.021 UJ | 0.022 UJ | | R | 0.025 UJ | 0.019 UJ | 0.024 UJ | 0.014 UJ | 0.016 UJ | 0.022 UJ | 0.028 UJ | 0.015 UJ | 0.022 UJ | 0.021 UJ | 0.019 UJ | 0.021 UJ | 0.027 UJ | |
| PEST/PCB | ENDRIN | MG/KG | | R | 0.021 UJ | 0.022 UJ | | R | 0.025 UJ | 0.019 UJ | 0.024 UJ | 0.014 UJ | 0.016 UJ | 0.022 UJ | 0.028 UJ | 0.015 UJ | 0.022 UJ | 0.021 UJ | 0.019 UJ | 0.021 UJ | 0.027 UJ | |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | | R | 0.021 UJ | 0.022 UJ | | R | 0.025 UJ | 0.019 UJ | 0.024 UJ | 0.014 UJ | 0.016 UJ | 0.022 UJ | 0.028 UJ | 0.015 UJ | 0.022 UJ | 0.021 UJ | 0.019 UJ | 0.021 UJ | 0.027 UJ | |
| PEST/PCB | ENDRIN KETONE | MG/KG | | R | 0.021 UJ | 0.022 UJ | | R | 0.025 UJ | 0.019 UJ | 0.024 UJ | 0.014 UJ | 0.016 UJ | 0.022 UJ | 0.028 UJ | 0.015 UJ | 0.022 UJ | 0.021 UJ | 0.019 UJ | 0.021 UJ | 0.027 UJ | |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | | R | 0.011 UJ | 0.011 UJ | | R | 0.013 UJ | 0.01 UJ | 0.012 UJ | 0.0074 UJ | 0.0081 UJ | 0.011 UJ | 0.014 UJ | 0.01 J | 0.0061 J | 0.011 UJ | 0.01 UJ | 0.0072 J | 0.014 UJ | |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | | R | 0.006 J | 0.0055 J | | R | 0.013 UJ | 0.01 UJ | 0.012 UJ | 0.0074 UJ | 0.0062 J | 0.011 UJ | 0.014 UJ | 0.0049 J | 0.013 J | 0.011 UJ | 0.01 UJ | 0.0059 J | 0.012 J | |
| PEST/PCB | HEPTACHLOR | MG/KG | | R | 0.011 UJ | 0.011 UJ | | R | 0.013 UJ | 0.01 UJ | 0.012 UJ | 0.0074 UJ | 0.0081 UJ | 0.011 UJ | 0.014 UJ | 0.0077 UJ | 0.011 UJ | 0.011 UJ | 0.01 UJ | 0.011 UJ | 0.014 UJ | |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | | R | 0.011 UJ | 0.011 UJ | | R | 0.013 UJ | 0.01 UJ | 0.012 UJ | 0.0043 J | 0.0081 UJ | 0.011 UJ | 0.0078 J | 0.0081 J | 0.011 UJ | 0.011 UJ | 0.0072 UJ | 0.011 UJ | 0.014 UJ | |
| PEST/PCB | METHOXYCHLOR | MG/KG | | R | 0.11 UJ | 0.11 UJ | | R | 0.13 UJ | 0.1 UJ | 0.12 UJ | 0.074 UJ | 0.081 UJ | 0.11 UJ | 0.14 UJ | 0.077 UJ | 0.11 UJ | 0.11 UJ | 0.1 UJ | 0.11 UJ | 0.14 UJ | |
| PEST/PCB | TOXAPHENE | MG/KG | | R | 1.1 UJ | 1.1 UJ | | R | 1.3 UJ | 1 UJ | 1.2 UJ | 0.74 UJ | 0.81 UJ | 1.1 UJ | 1.4 UJ | 0.77 UJ | 1.1 UJ | 1.1 UJ | 1 UJ | 1.1 UJ | 1.4 UJ | |
| SVOC | 1,1'-BIPHENYL | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | 1,2,4,5-TETRACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | 2,3,4,6-TETRACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | | R | 5.2 UJ | 5.5 UJ | | R | 6.4 UJ | 4.9 UJ | 5.9 UJ | 3.6 UJ | 4 UJ | 5.5 UJ | 6.9 UJ | 3.8 UJ | 5.5 UJ | 5.2 UJ | 4.9 UJ | 5.2 UJ | 6.9 UJ | |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | 2,4-DINITROPHENOL | MG/KG | | R | 5.2 UJ | 5.5 UJ | | R | 6.4 UJ | 4.9 UJ | 5.9 UJ | 3.6 UJ | 4 UJ | 5.5 UJ | 6.9 UJ | 3.8 UJ | 5.5 UJ | 5.2 UJ | 4.9 UJ | 5.2 UJ | 6.9 UJ | |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | 2-CHLOROPHENOL | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | 2-METHYLPHENOL | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | 2-NITROANILINE | MG/KG | | R | 5.2 UJ | 5.5 UJ | | R | 6.4 UJ | 4.9 UJ | 5.9 UJ | 3.6 UJ | 4 UJ | 5.5 UJ | 6.9 UJ | 3.8 UJ | 5.5 UJ | 5.2 UJ | 4.9 UJ | 5.2 UJ | 6.9 UJ | |
| SVOC | 2-NITROPHENOL | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | 3-NITROANILINE | MG/KG | | R | 5.2 UJ | 5.5 UJ | | R | 6.4 UJ | 4.9 UJ | 5.9 UJ | 3.6 UJ | 4 UJ | 5.5 UJ | 6.9 UJ | 3.8 UJ | 5.5 UJ | 5.2 UJ | 4.9 UJ | 5.2 UJ | 6.9 UJ | |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | | R | 5.2 UJ | 5.5 UJ | | R | 6.4 UJ | 4.9 UJ | 5.9 UJ | 3.6 UJ | 4 UJ | 5.5 UJ | 6.9 UJ | 3.8 UJ | 5.5 UJ | 5.2 UJ | 4.9 UJ | 5.2 UJ | 6.9 UJ | |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | 4-CHLOROANILINE | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | 4-METHYLPHENOL | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 0.13 J | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | 4-NITROANILINE | MG/KG | | R | 5.2 UJ | 5.5 UJ | | R | 6.4 UJ | 4.9 UJ | 5.9 UJ | 3.6 UJ | 4 UJ | 5.5 UJ | 6.9 UJ | 3.8 UJ | 5.5 UJ | 5.2 UJ | 4.9 UJ | 5.2 UJ | 6.9 UJ | |
| SVOC | 4-NITROPHENOL | MG/KG | | R | 5.2 UJ | 5.5 UJ | | R | 6.4 UJ | 4.9 UJ | 5.9 UJ | 3.6 UJ | 4 UJ | 5.5 UJ | 6.9 UJ | 3.8 UJ | 5.5 UJ | 5.2 UJ | 4.9 UJ | 5.2 UJ | 6.9 UJ | |
| SVOC | ACENAPHTHENE | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 0.069 J | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | ACENAPHTHYLENE | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | ACETOPHENONE | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | ANTHRACENE | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 0.12 J | 0.1 J | 0.13 J | 0.12 J | 0.16 J | 0.1 J | 0.14 J | 0.15 J | 0.14 J | 0.11 J | 0.12 J | |
| SVOC | ATRAZINE | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | R | R | R | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | BENZALDEHYDE | MG/KG | | 0.83 J | 2 UJ | 2.2 UJ | | 0.51 J | 2.5 UJ | 0.58 J | 0.59 J | 0.56 J | 0.5 J | 0.47 J | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 1 J | 2.7 UJ | |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | | 0.29 J | 0.56 J | 0.5 J | | 0.49 J | 0.53 J | 0.25 J | 0.68 J | 0.57 J | 0.65 J | 0.46 J | 0.9 J | 0.67 J | 0.69 J | 0.7 J | 0.73 J | 0.72 J | 0.66 J | |
| SVOC | BENZO(A)PYRENE | MG/KG | | 0.36 J | 0.75 J | 0.62 J | | 0.7 J | 0.74 J | 0.34 J | 0.9 J | 0.74 J | 0.9 J | 0.64 J | 1 J | 0.78 J | 0.72 J | 0.8 J | 0.81 J | 0.99 J | 0.79 J | |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | | 0.46 J | 0.69 J | 0.68 J | | 0.76 J | 0.78 J | 0.31 J | 1.1 J | 1 J | 1.3 J | 0.83 J | 1.1 J | 1 J | 1 J | 1.2 J | 1.3 J | 1.9 J | 1.3 J | |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | | R | 0.54 J | 0.42 J | | 0.62 J | 0.55 J | 1.9 UJ | 0.61 J | 1.4 UJ | 1.6 UJ | 2.2 UJ | 0.62 J | 0.51 J | 0.47 J | 0.46 J | 0.41 J | 0.46 J | 0.42 J | |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | | 0.47 J | 0.8 J | 0.55 J | | 0.6 J | 0.85 J | 0.49 J | 1.3 J | 0.55 J | 0.62 J | 0.44 J | 1.6 J | 0.83 J | 0.75 J | 1.1 J | 0.96 J | 1.2 J | 0.89 J | |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 0.75 J | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | BWDD0037 | BWDD0037 | BWDD0038 | BWDD0039 | BWDD0040 | BWDD0040 | BWDD0041 | BWDD0042 | BWDD0043 | BWDD0044 | BWDD0044 | BWDD0045 | BWDD0046 | BWDD0047 | BWDD0048 | BWDD0049 | BWDD0050 | BWDD0051 | BWDD0052 | BWDD0053 |
| | | Field Sample ID | BWDD0037-SD-AA-AB-0 | BWDD0037-SD-AA-AB-0 | BWDD0038-SD-AA-AB-0 | BWDD0039-SD-AA-AB-0 | BWDD0040-SD-AA-AB-0 | BWDD0040-SD-AA-AB-0 | BWDD0041-SD-AA-AB-0 | BWDD0042-SD-AA-AB-0 | BWDD0043-SD-AA-AB-0 | BWDD0044-SD-AA-AB-0 | BWDD0044-SD-AA-AB-1 | BWDD0045-SD-AA-AB-0 | BWDD0046-SD-AA-AB-0 | BWDD0047-SD-AA-AB-0 | BWDD0048-SD-AA-AB-0 | BWDD0049-SD-AA-AB-0 | BWDD0050-SD-AA-AB-0 | BWDD0051-SD-AA-AB-0 | BWDD0052-SD-AA-AB-0 | BWDD0053-SD-AA-AB-0 |
| | | Sample Date | 12/18/07 | 7/20/05 | 7/20/05 | 7/20/05 | 12/18/07 | 7/20/05 | 7/20/05 | 7/20/05 | 7/20/05 | 7/26/05 | 7/26/05 | 7/26/05 | 7/27/05 | 7/27/05 | 7/27/05 | 7/27/05 | 8/15/05 | 8/15/05 | 8/15/05 | 12/18/07 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 0.25 J | 2.7 UJ | |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | | 0.45 J | 1.1 J | 0.9 J | | 0.88 J | 0.32 J | 2.2 J | 1.3 J | 1.4 UJ | 1.6 UJ | 2.2 UJ | 0.7 J | 0.6 J | 1.5 J | 3.2 J | 0.3 J | 1.1 J | 0.67 J | |
| SVOC | CAPROLACTAM | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | CARBAZOLE | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 0.11 J | 1.4 UJ | 0.13 J | 2.2 UJ | 2.7 UJ | 0.069 J | 0.1 J | 0.099 J | 0.11 J | 0.11 J | 2.7 UJ | |
| SVOC | CHRYSENE | MG/KG | | 0.48 J | 0.96 J | 0.78 J | | 0.89 J | 1.1 J | 0.43 J | 1.2 J | 1.2 J | 1.5 J | 0.95 J | 1.4 J | 1.1 J | 1.1 J | 1.1 J | 1 J | 1.3 J | 1.1 J | |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | | R | 0.24 J | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 0.15 J | 0.2 J | 0.2 J | 0.16 J | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | DIBENZOFURAN | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | DIETHYLPHTHALATE | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | DIMETHYLPHTHALATE | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | | R | 0.12 J | 0.12 J | | R | 2.5 UJ | 0.13 J | 0.14 J | 1.4 UJ | 1.6 UJ | 2.2 UJ | 0.17 J | 1.5 UJ | 2.2 UJ | 0.82 J | 0.17 J | 0.14 J | 0.16 J | |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | R | 2.2 UJ | R | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | FLUORANTHENE | MG/KG | | 0.7 J | 1.2 J | 0.82 J | | 1.1 J | 1.1 J | 0.67 J | 2.1 J | 0.94 J | 1.3 J | 0.78 J | 1.3 J | 1.2 J | 1.2 J | 1.2 J | 1.7 J | 2.1 J | 1.6 J | |
| SVOC | FLUORENE | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 0.13 J | 0.1 J | 0.1 J | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | HEXACHLOROBENZENE | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | HEXACHLOROETHANE | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | | 0.47 J | 0.35 J | | | 0.49 J | 0.43 J | 1.9 UJ | 0.53 J | 1.4 UJ | 1.6 UJ | 2.2 UJ | 0.55 J | 0.44 J | 0.36 J | 0.42 J | 0.36 J | 0.42 J | 0.38 J | |
| SVOC | ISOPHORONE | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | NAPHTHALENE | MG/KG | | R | 0.11 J | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 4.2 J | 0.071 J | 0.072 J | 0.3 J | 2.7 UJ | 0.16 J | 0.14 J | 0.4 J | 1.9 UJ | 2.1 UJ | 0.14 J | |
| SVOC | NITROBENZENE | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | PENTACHLOROPHENOL | MG/KG | | R | 5.2 UJ | 5.5 UJ | | R | 6.4 UJ | 4.9 UJ | 5.9 UJ | 3.6 UJ | 4 UJ | 5.5 UJ | 6.9 UJ | 3.8 UJ | 5.5 UJ | 5.2 UJ | 4.9 UJ | 5.2 UJ | 6.9 UJ | |
| SVOC | PHENANTHRENE | MG/KG | | 0.22 J | 0.57 J | 0.48 J | | 0.5 J | 0.63 J | 0.26 J | 0.8 J | 0.7 J | 1 J | 0.66 J | 0.97 J | 0.79 J | 0.82 J | 0.91 J | 0.84 J | 0.88 J | 0.76 J | |
| SVOC | PHENOL | MG/KG | | R | 2 UJ | 2.2 UJ | | R | 2.5 UJ | 1.9 UJ | 2.4 UJ | 1.4 UJ | 1.6 UJ | 2.2 UJ | 2.7 UJ | 1.5 UJ | 2.2 UJ | 2.1 UJ | 1.9 UJ | 2.1 UJ | 2.7 UJ | |
| SVOC | PYRENE | MG/KG | | 0.89 J | 1.6 J | 1.3 J | | 1.6 J | 1.5 J | 0.68 J | 1.9 J | 1.3 J | 2 J | 1.3 J | 2.9 J | 3.1 J | 2.4 J | 2.2 J | 1.5 J | 1.7 J | 1.2 J | |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | 1,1-DICHLOROETHANE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | 1,1-DICHLOROETHENE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | 1,2,3-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | 1,2-DIBROMOETHANE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.017 J | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.024 J | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | 1,2-DICHLOROETHANE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.011 J | 0.02 J | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | 1,4-DIOXANE (P-DIOXANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | ACETONE | MG/KG | | 0.38 J | 0.13 J | 0.51 J | | 0.43 J | 0.13 J | 0.35 J | 0.75 J | 0.1 J | 0.048 J | 0.24 J | 0.22 J | 0.18 J | 0.34 J | 0.46 J | 0.077 J | 0.44 J | 0.39 J | |
| VOC | BENZENE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | BROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | BROMOFORM | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | BROMOMETHANE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | CARBON DISULFIDE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | 0.034 J | 0.12 UJ | 0.014 J | 0.015 J | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | CARBON TETRACHLORIDE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | CHLOROBENZENE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | CHLOROETHANE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | CHLOROFORM | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | CHLOROMETHANE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.008 J | 0.018 J | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | CYCLOHEXANE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.037 J | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.007 J | 0.031 J | 0.021 J | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | DICHLOROMETHANE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.016 J | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | ETHYLBENZENE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | ISOPROPYLBENZENE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | METHYL ACETATE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 J | 0.044 J | 0.041 J | 0.05 J | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | METHYL ETHYL KETONE | MG/KG | | 0.15 J | 0.041 J | 0.18 J | | 0.14 J | 0.04 J | 0.12 J | 0.27 J | 0.041 J | 0.079 UJ | 0.092 J | 0.079 J | 0.068 J | 0.15 J | 0.18 J | 0.025 J | 0.16 J | 0.16 J | |
| VOC | METHYLCYCLOHEXANE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.072 J | 0.2 J | 0.018 J | 0.012 J | 0.13 UJ | 0.16 UJ | 0.041 J | 0.095 J | 0.083 J | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | STYRENE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | TETRACHLOROETHENE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | TOLUENE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.011 J | 0.17 UJ | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | VINYL CHLORIDE | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.11 UJ | 0.12 UJ | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.064 UJ | 0.14 UJ | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |
| VOC | XYLENE, O- | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES, M & P | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | | R | 0.091 UJ | 0.14 UJ | | R | 0.12 UJ | 0.013 J | 0.05 J | 0.076 UJ | 0.079 UJ | 0.13 UJ | 0.16 UJ | 0.011 J | 0.019 J | 0.13 UJ | 0.1 UJ | 0.1 UJ | 0.17 UJ | |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | BWL | BWL | BWL | BWL | BWL | BWL | BWL | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | BWDD0053 | BWDD0053 | BWDD0056 | BWDD0057 | BWDD0058 | BWDD0059 | BWDD0060 | HCDD0001 | HCDD0002 | HCDD0003 | HCDD0004 | HCDD0005 | HCDD0005 | HCDD0006 | HCDD0007 | HCDD0008 | HCDD0009 | HCDD0010 | HCDD0011 | HCDD0012 |
| | | Field Sample ID | BWDD0053-SD-AA-AB-0 | BWDD0053-SD-AA-AB-1 | BWDD0056-SD-AA-AB-0 | BWDD0057-SD-AA-AB-0 | BWDD0058-SD-AA-AB-0 | BWDD0059-SD-AA-AB-0 | BWDD0060-SD-AA-AB-0 | HCDD0001-SD-AA-AB-0 | HCDD0002-SD-AA-AB-0 | HCDD0003-SD-AA-AB-0 | HCDD0004-SD-AA-AB-0 | HCDD0005-SD-AA-AB-0 | HCDD0005-SD-AA-AB-1 | HCDD0006-SD-AA-AB-0 | HCDD0007-SD-AA-AB-0 | HCDD0008-SD-AA-AB-0 | HCDD0009-SD-AA-AB-0 | HCDD0010-SD-AA-AB-0 | HCDD0011-SD-AA-AB-0 | HCDD0012-SD-AA-AB-0 |
| | | Sample Date | 8/15/05 | 8/15/05 | 9/20/05 | 9/21/05 | 9/21/05 | 9/21/05 | 9/21/05 | 6/1/05 | 6/1/05 | 6/2/05 | 6/2/05 | 6/2/05 | 6/2/05 | 6/3/05 | 6/3/05 | 6/3/05 | 6/6/05 | 6/6/05 | 6/6/05 | 6/6/05 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | R | R | 3570 | 3580 | 332 | 4600 J | 3010 | 1860 | 1110 | 2690 | 2620 | 4500 J | 3390 J | 5730 J | 4700 J | 3800 J | 1210 | 949 | 1660 | 1010 |
| METALS | ANTIMONY | MG/KG | R | R | 4.4 U | 3.4 U | 2.9 U | 4.8 UJ | 4.3 U | 1.2 U | 0.84 U | 1.1 U | 1.1 U | 2.6 UJ | 2.3 UJ | 3.2 UJ | 3 UJ | 2.6 UJ | 4.6 J | 1.2 J | 4.8 J | 1.2 J |
| METALS | ARSENIC | MG/KG | R | R | 64 J | 63.4 J | 2.2 J | 83.4 J | 45.7 J | 115 J | 6 J | 192 J | 13.9 J | 97.1 J | 76.9 J | 163 J | 94.4 J | 61 J | 28.9 J | 19.4 | 32.5 | 18.5 |
| METALS | BARIUM | MG/KG | R | R | 155 | 74.5 | 3.5 U | 83.5 J | 59.9 J | 23.8 J | 19.2 J | 26.4 J | 24.7 J | 105 J | 77.1 J | 148 J | 187 J | 103 J | 87.9 | 129 | 178 | 89.4 |
| METALS | BERYLLIUM | MG/KG | R | R | 0.09 J | 0.25 J | 0.05 U | 0.27 J | 0.16 J | 0.08 J | 0.07 J | 0.21 J | 0.13 J | 0.25 J | 0.21 J | 0.23 J | 0.35 J | 0.2 J | 0.05 U | 0.04 U | 0.07 J | 0.05 U |
| METALS | CADMIUM | MG/KG | R | R | 2 | 2.5 | 0.14 U | 2.9 J | 1.7 J | 1.2 J | 0.23 J | 1.2 J | 0.44 J | 1.9 J | 2.8 J | 6.9 J | 6.8 J | 1.4 J | 0.44 J | 0.33 J | 0.77 J | 0.3 J |
| METALS | CALCIUM | MG/KG | R | R | 1200 J | 871 J | 118 UJ | 686 J | 1020 J | 1040 J | 1550 | 2610 | 2600 | 4460 J | 3970 J | 3220 J | 4480 J | 2810 J | 1120 J | 6140 | 5930 | 2040 |
| METALS | CHROMIUM | MG/KG | R | R | 45 | 46.5 J | 1.1 J | 29.9 J | 15.5 J | 23 J | 5.3 J | 23.1 J | 19 J | 26.8 J | 27.8 J | 1090 J | 255 J | 93.3 J | 37.6 J | 27.2 J | 64.4 J | 26.1 J |
| METALS | COBALT | MG/KG | R | R | 1.9 J | 1.9 J | 0.92 U | 5.3 J | 4.1 J | 1.1 J | 1 J | 3 J | 2 J | 5.2 J | 3.7 J | 3.7 J | 5.2 J | 3.2 J | 1.6 J | 2.3 J | 1.8 J | 1.6 J |
| METALS | COPPER | MG/KG | R | R | 34.8 | 48.1 J | 3.9 J | 66.8 J | 39.9 J | 31.5 J | 9.3 J | R | R | R | R | 86 J | 51.7 J | 12.7 J | 33.8 J | 18.9 J | 28.1 J | 12.1 J |
| METALS | CYANIDE | MG/KG | R | R | 1.1 | 2.2 J | 0.42 UJ | 0.96 J | 0.84 UJ | 2.3 | 0.48 U | 3.1 | 0.6 U | 1.4 UJ | 5.1 J | 213 J | 18.4 J | 4.2 J | 2.5 | 5 | 26.8 | 1.5 |
| METALS | IRON | MG/KG | R | R | 11100 | 8830 | 577 | 11400 J | 6870 | 4260 J | 3730 J | 9060 J | 4400 J | 9370 J | 7910 J | 10300 J | 11900 J | 9280 J | 5380 | 3820 | 5900 | 4280 |
| METALS | LEAD | MG/KG | R | R | 443 | 464 | 4.7 | 354 J | 162 | 244 | 48.9 | 248 | 70.5 | 309 J | 296 J | 1720 J | 602 J | 192 J | 308 J | 194 J | 392 J | 194 J |
| METALS | MAGNESIUM | MG/KG | R | R | 371 J | 144 J | 93 UJ | 269 J | 139 UJ | 83.7 J | 912 J | 2080 | 1410 | 383 J | 458 J | 162 UJ | 275 J | 175 J | 428 J | 3750 | 1480 J | 1100 J |
| METALS | MANGANESE | MG/KG | R | R | 47.1 | 23.7 J | 4.7 J | 35 J | 44.4 J | 7.6 J | 23.4 J | 67.4 J | 54.3 J | 74.9 J | 64.3 J | 57.2 J | 76.4 J | 72.4 J | 20.4 | 49.7 | 39.1 | 20 |
| METALS | MERCURY | MG/KG | R | R | 0.15 | 0.081 U | 0.056 U | 0.13 | 0.08 U | 0.071 U | 0.046 U | 0.071 U | 0.065 U | 0.15 UJ | 0.11 UJ | 0.2 UJ | 0.17 UJ | 0.13 UJ | 0.19 | 0.15 | 0.21 | 0.072 J |
| METALS | NICKEL | MG/KG | R | R | 3 J | 4.3 J | 1 U | 7 J | 4.5 J | 2.3 J | 2.5 J | 5.7 J | 8.1 J | 5.8 J | 9.6 J | 6.9 J | 9 J | 4.6 J | 3.1 J | 2.5 J | 3.5 J | 2.3 J |
| METALS | POTASSIUM | MG/KG | R | R | 241 U | 178 U | 151 U | 277 J | 226 U | 128 U | 155 J | 470 J | 348 J | 268 UJ | 241 UJ | 328 UJ | 306 UJ | 272 UJ | 107 U | 104 J | 146 J | 132 J |
| METALS | SELENIUM | MG/KG | R | R | 1.4 U | 2 J | 0.92 U | 2.2 J | 1.9 J | 1.1 U | 0.78 U | 1.1 J | 0.97 U | 2.4 UJ | 2.2 UJ | 2.9 UJ | 2.7 UJ | 2.4 UJ | 0.96 UJ | 0.78 UJ | 1.3 UJ | 0.86 UJ |
| METALS | SILVER | MG/KG | R | R | 0.66 U | 0.51 U | 0.44 U | 0.72 UJ | 0.65 U | 0.54 U | 0.37 U | 0.48 U | 0.46 U | 1.1 UJ | 1 UJ | 1.4 UJ | 1.3 UJ | 1.2 UJ | 0.45 U | 0.37 U | 0.6 U | 0.41 U |
| METALS | SODIUM | MG/KG | R | R | 237 J | 175 U | 149 U | 245 UJ | 222 U | 147 U | 100 U | 130 U | 932 J | 308 UJ | 277 UJ | 377 UJ | 352 UJ | 313 UJ | 123 U | 99.9 U | 164 U | 111 U |
| METALS | THALLIUM | MG/KG | R | R | 2.6 U | 2 U | 1.7 U | 2.8 UJ | 2.5 U | 1.9 U | 1.3 U | 1.7 U | 1.6 U | 4 UJ | 3.6 UJ | 4.9 UJ | 4.6 UJ | 4.1 UJ | 1.6 U | 1.3 U | 2.1 U | 7.1 J |
| METALS | VANADIUM | MG/KG | R | R | 13.9 J | 10.7 J | 1.1 U | 13.6 J | 8.2 J | 6.8 J | 5.2 J | 10.7 J | 7.9 J | 14.9 J | 12.3 J | 15.1 J | 15.8 J | 13.2 J | 7.8 J | 4.9 J | 11.1 J | 7.1 |
| METALS | ZINC | MG/KG | R | R | 199 | 198 J | 9.9 J | 249 J | 165 J | 88 | 54.6 | 127 | 59.6 | 171 J | 193 J | 308 J | 428 J | 127 J | 124 J | 140 J | 270 J | 90 J |
| PEST/PCB | 4,4'-DDD | MG/KG | 0.038 J | 0.038 J | 0.079 J | 0.029 J | 0.0039 UJ | 0.0042 J | 0.0058 UJ | 0.0059 UJ | 0.0044 UJ | 0.0047 U | 0.0043 U | 0.011 UJ | 0.0094 UJ | 0.014 UJ | 0.013 J | 0.013 UJ | 0.013 | 0.01 | 0.016 | 0.005 |
| PEST/PCB | 4,4'-DDE | MG/KG | 0.032 J | 0.037 J | 0.028 J | 0.01 J | 0.0039 UJ | 0.0088 J | 0.0036 J | 0.0059 UJ | 0.0027 J | 0.0047 U | 0.0043 U | 0.011 UJ | 0.0094 UJ | 0.014 UJ | 0.008 J | 0.013 UJ | 0.0022 J | 0.0028 J | 0.005 J | 0.0043 U |
| PEST/PCB | 4,4'-DDT | MG/KG | R | R | 0.0059 UJ | 0.0053 UJ | 0.0039 UJ | 0.0069 UJ | 0.0058 UJ | 0.0059 UJ | 0.0044 UJ | 0.0047 U | 0.0043 U | 0.011 UJ | 0.0094 UJ | 0.014 UJ | 0.012 UJ | 0.013 UJ | 0.0044 U | 0.0042 U | 0.0058 U | 0.0043 U |
| PEST/PCB | ALDRIN | MG/KG | R | R | 0.003 UJ | 0.0027 UJ | 0.002 UJ | 0.0035 UJ | 0.003 UJ | 0.003 UJ | 0.0023 UJ | 0.0024 U | 0.0022 U | 0.0057 UJ | 0.0049 UJ | 0.0071 UJ | 0.0063 UJ | 0.0065 UJ | 0.0023 U | 0.0022 U | 0.003 U | 0.0022 U |
| PEST/PCB | ALPHA-BHC | MG/KG | R | R | 0.003 UJ | 0.0027 UJ | 0.002 UJ | 0.0035 UJ | 0.003 UJ | 0.003 UJ | 0.0023 UJ | 0.0024 U | 0.0022 U | 0.0057 UJ | 0.0049 UJ | 0.0071 UJ | 0.0063 UJ | 0.0065 UJ | 0.0023 U | 0.0022 U | 0.003 U | 0.0022 U |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | R | R | 0.003 UJ | 0.0027 UJ | 0.002 UJ | 0.0035 UJ | 0.003 UJ | 0.003 UJ | 0.0045 J | 0.0024 U | 0.0022 U | 0.0059 J | 0.0024 J | 0.0071 UJ | 0.0063 UJ | 0.0065 UJ | 0.0033 | 0.0026 J | 0.0036 J | 0.0032 |
| PEST/PCB | AROCLOR-1016 | MG/KG | R | R | 0.059 UJ | 0.053 UJ | 0.039 UJ | 0.069 UJ | 0.058 UJ | 0.059 UJ | 0.044 UJ | 0.047 U | 0.043 U | 0.11 UJ | 0.094 UJ | 0.14 UJ | 0.12 UJ | 0.13 UJ | 0.044 U | 0.042 U | 0.058 U | 0.043 U |
| PEST/PCB | AROCLOR-1221 | MG/KG | R | R | 0.12 UJ | 0.11 UJ | 0.079 UJ | 0.14 UJ | 0.12 UJ | 0.12 UJ | 0.089 UJ | 0.096 U | 0.087 U | 0.22 UJ | 0.19 UJ | 0.28 UJ | 0.25 UJ | 0.26 UJ | 0.089 U | 0.086 U | 0.12 U | 0.088 U |
| PEST/PCB | AROCLOR-1232 | MG/KG | R | R | 0.059 UJ | 0.053 UJ | 0.039 UJ | 0.069 UJ | 0.058 UJ | 0.059 UJ | 0.044 UJ | 0.047 U | 0.043 U | 0.11 UJ | 0.094 UJ | 0.14 UJ | 0.12 UJ | 0.13 UJ | 0.044 U | 0.042 U | 0.058 U | 0.043 U |
| PEST/PCB | AROCLOR-1242 | MG/KG | R | R | 0.059 UJ | 0.053 UJ | 0.039 UJ | 0.069 UJ | 0.058 UJ | 0.059 UJ | 0.044 UJ | 0.047 U | 0.043 U | 0.11 UJ | 0.094 UJ | 0.14 UJ | 0.12 UJ | 0.13 UJ | 0.044 U | 0.042 U | 0.058 U | 0.043 U |
| PEST/PCB | AROCLOR-1248 | MG/KG | R | R | 0.059 UJ | 0.053 UJ | 0.039 UJ | 0.069 UJ | 0.058 UJ | 0.059 UJ | 0.044 UJ | 0.047 U | 0.043 U | 0.11 UJ | 0.094 UJ | 0.14 UJ | 0.12 UJ | 0.13 UJ | 0.044 U | 0.042 U | 0.058 U | 0.043 U |
| PEST/PCB | AROCLOR-1254 | MG/KG | R | R | 0.059 UJ | 0.053 UJ | 0.039 UJ | 0.069 UJ | 0.058 UJ | 0.059 UJ | 0.044 UJ | 0.047 U | 0.043 U | 0.11 UJ | 0.094 UJ | 0.14 UJ | 0.12 UJ | 0.13 UJ | 0.044 U | 0.042 U | 0.058 U | 0.043 U |
| PEST/PCB | AROCLOR-1260 | MG/KG | R | R | 0.031 J | 0.053 UJ | 0.039 UJ | 0.069 UJ | 0.058 UJ | 0.059 UJ | 0.044 UJ | 0.047 U | 0.043 U | 0.11 UJ | 0.094 UJ | 0.14 UJ | 0.12 UJ | 0.13 UJ | 0.044 U | 0.042 U | 0.058 U | 0.043 U |
| PEST/PCB | AROCLOR-1262 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1268 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | BETA-BHC | MG/KG | R | R | 0.003 UJ | 0.0027 UJ | 0.002 UJ | 0.0035 UJ | 0.003 UJ | 0.003 UJ | 0.0023 UJ | 0.0024 U | 0.0022 U | 0.0057 UJ | 0.0049 UJ | 0.0071 UJ | 0.0063 UJ | 0.0065 UJ | 0.0023 U | R | R | R |
| PEST/PCB | DELTA-BHC | MG/KG | R | R | 0.003 UJ | 0.0027 UJ | 0.002 UJ | 0.0035 UJ | 0.003 UJ | 0.003 UJ | 0.0023 UJ | 0.0024 U | 0.0022 U | 0.0057 UJ | 0.0049 UJ | 0.0071 UJ | 0.0063 UJ | 0.0065 UJ | 0.0023 U | 0.0022 U | 0.003 U | 0.0022 U |
| PEST/PCB | DIELDRIN | MG/KG | R | R | 0.0059 UJ | 0.0053 UJ | 0.0039 UJ | 0.0069 UJ | 0.0058 UJ | 0.0059 UJ | 0.0044 UJ | 0.0047 U | 0.0043 U | 0.016 J | 0.0094 UJ | 0.014 UJ | 0.012 UJ | 0.013 UJ | 0.0044 U | 0.0042 U | 0.0034 J | 0.0043 U |
| PEST/PCB | ENDOSULFAN I | MG/KG | R | R | 0.003 UJ | 0.0027 UJ | 0.002 UJ | 0.0035 UJ | 0.003 UJ | 0.003 UJ | 0.0023 UJ | 0.0024 U | 0.0022 U | 0.0057 UJ | 0.0049 UJ | 0.0071 UJ | 0.0063 UJ | 0.0065 UJ | 0.0023 U | 0.0022 U | 0.003 U | 0.0022 U |
| PEST/PCB | ENDOSULFAN II | MG/KG | R | R | 0.0059 UJ | 0.0053 UJ | 0.0039 UJ | 0.0069 UJ | 0.0058 UJ | 0.0059 UJ | 0.0044 UJ | 0.0047 U | 0.0043 U | 0.011 UJ | 0.0094 UJ | 0.014 UJ | 0.012 UJ | 0.013 UJ | 0.0044 UJ | 0.0042 UJ | 0.0058 UJ | 0.0043 UJ |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | R | R | 0.0059 UJ | 0.0053 UJ | 0.0039 UJ | 0.0069 UJ | 0.0058 UJ | 0.0059 UJ | 0.0044 UJ | 0.0047 U | 0.0043 U | 0.011 UJ | 0.0094 UJ | 0.014 UJ | 0.012 UJ | 0.013 UJ | 0.0044 U | 0.0042 U | 0.0058 U | 0.0043 U |
| PEST/PCB | ENDRIN | MG/KG | R | R | 0.0059 UJ | 0.0053 UJ | 0.0039 UJ | 0.0069 UJ | 0.0058 UJ | 0.0059 UJ | 0.0044 UJ | 0.0047 U | 0.0043 U | 0.011 UJ | 0.0094 UJ | 0.014 UJ | 0.012 UJ | 0.013 UJ | 0.0044 U | 0.0042 U | 0.0058 U | 0.0043 U |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | R | R | 0.0059 UJ | 0.0053 UJ | 0.0039 UJ | 0.0069 UJ | 0.0058 UJ | 0.0059 UJ | 0.0044 UJ | 0.0047 U | 0.0043 U | 0.011 UJ | 0.0094 UJ | 0.014 UJ | 0.012 UJ | 0.013 UJ | 0.0044 U | 0.0042 U | 0.0058 U | 0.0033 J |
| PEST/PCB | ENDRIN KETONE | MG/KG | R | R | 0.0059 UJ | 0.0053 UJ | 0.0039 UJ | 0.0069 UJ | 0.0058 UJ | 0.0059 UJ | 0.0044 UJ | 0.0047 U | 0.0043 U | 0.011 UJ | 0.0094 UJ | 0.014 UJ | 0.012 UJ | 0.013 UJ | 0.0044 U | 0.0042 U | 0.0032 J | 0.0043 U |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | R | R | 0.003 UJ | 0.0027 UJ | 0.002 UJ | 0.0035 UJ | 0.003 UJ | 0.003 UJ | 0.0023 UJ | 0.0024 U | 0.0013 J | 0.0057 UJ | 0.0049 UJ | 0.0071 UJ | 0.0063 UJ | 0.0065 UJ | 0.0023 U | 0.0022 U | 0.003 U | 0.0022 U |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | R | R | 0.003 UJ | 0.0027 UJ | 0.002 UJ | 0.0035 UJ | 0.003 UJ | 0.003 UJ | 0.0047 J | 0.0016 J | 0.0012 J | 0.0061 J | 0.0035 J | 0.0071 UJ | 0.004 J | 0.0065 UJ | 0.0041 | 0.0034 | 0.0041 J | 0.0032 J |
| PEST/PCB | HEPTACHLOR | MG/KG | R | R | 0.003 UJ | 0.0027 UJ | 0.002 UJ | 0.0035 UJ | 0.003 UJ | 0.003 UJ | 0.0023 UJ | 0.0024 U | 0.0022 U | 0.0057 UJ | 0.0049 UJ | 0.0071 UJ | 0.0063 UJ | 0.0065 UJ | 0.0023 U | 0.0022 U | 0.003 U | 0.0022 U |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | R | R | 0.003 UJ | 0.0027 UJ | 0.002 UJ | 0.0035 UJ | 0.003 UJ | 0.003 UJ | 0.0023 UJ | 0.0024 U | 0.0022 U | 0.0057 UJ | 0.0049 UJ | 0.0071 UJ | 0.0063 UJ | 0.0065 UJ | 0.0023 U | 0.0022 U | 0.0018 J | 0.0022 U |
| PEST/PCB | METHOXYCHLOR | MG/KG | R | R | 0.03 UJ | 0.027 UJ | 0.02 UJ | 0.035 UJ | 0.03 UJ | 0.03 UJ | 0.023 UJ | 0.024 U | 0.022 U | 0.057 UJ | 0.049 UJ | 0.071 UJ | 0.063 UJ | 0.065 UJ | 0.023 UJ | 0.022 UJ | 0.03 UJ | 0.022 UJ |
| PEST/PCB | TOXAPHENE | MG/KG | R | R | 0.3 UJ | 0.27 UJ | 0.2 UJ | 0.35 UJ | 0.3 UJ | 0.3 UJ | 0.23 UJ | 0.24 U | 0.22 U | 0.57 UJ | 0.49 UJ | 0.71 UJ | 0.63 UJ | 0.65 UJ | 0.23 U | 0.22 U | 0.3 U | 0.22 U |
| SVOC | 1,1'-BIPHENYL | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.023 J | 0.038 J | 0.43 U |
| SVOC | 1,2,4,5-TETRACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 UJ | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 U | 0.43 U |
| SVOC | 2,3,4,6-TETRACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | R | R | 1.5 UJ | 1.3 UJ | 0.98 UJ | 1.7 UJ | 1.4 UJ | 1.5 UJ | 1.1 UJ | 1.2 U | 1.1 U | 2.8 UJ | 2.4 UJ | 3.4 UJ | 3.1 UJ | 3.2 UJ | 1.1 U | 1.1 U | 1.4 U | 1.1 U |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 U | 0.43 U |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 U | 0.43 U |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 U | 0.43 U |
| SVOC | 2,4-DINITROPHENOL | MG/KG | R | R | 1.5 UJ | 1.3 UJ | 0.98 UJ | 1.7 UJ | 1.4 UJ | 1.5 UJ | 1.1 UJ | 1.2 U | 1.1 U | 2.8 UJ | 2.4 UJ | 3.4 UJ | 3.1 UJ | 3.2 UJ | 1.1 U | 1.1 U | 1.4 UJ | 1.1 U |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 U | 0.43 U |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 U | 0.43 U |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 U | 0.43 U |
| SVOC | 2-CHLOROPHENOL | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 U | 0.43 U |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | R | R | 0.041 J | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 0.063 J | 1.3 UJ | 0.44 U | 0.025 J | 0.074 J | 0.43 U |
| SVOC | 2-METHYLPHENOL | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 U | 0.43 U |
| SVOC | 2-NITROANILINE | MG/KG | R | R | 1.5 UJ | 1.3 UJ | 0.98 UJ | 1.7 UJ | 1.4 UJ | 1.5 UJ | 1.1 UJ | 1.2 U | 1.1 U | 2.8 UJ | 2.4 UJ | 3.4 UJ | 3.1 UJ | 3.2 UJ | 1.1 U | 1.1 U | 1.4 U | 1.1 U |
| SVOC | 2-NITROPHENOL | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 U | 0.43 U |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 UJ | 0.43 UJ | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 UJ | 0.42 UJ | 0.58 UJ | 0.43 U |
| SVOC | 3-NITROANILINE | MG/KG | R | R | 1.5 UJ | 1.3 UJ | 0.98 UJ | 1.7 UJ | 1.4 UJ | 1.5 UJ | 1.1 UJ | 1.2 U | 1.1 U | 2.8 UJ | 2.4 UJ | 3.4 UJ | 3.1 UJ | 3.2 UJ | 1.1 U | 1.1 U | 1.4 U | 1.1 U |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | R | R | 1.5 UJ | 1.3 UJ | 0.98 UJ | 1.7 UJ | 1.4 UJ | 1.5 UJ | 1.1 UJ | 1.2 U | 1.1 U | 2.8 UJ | 2.4 UJ | 3.4 UJ | 3.1 UJ | 3.2 UJ | 1.1 U | 1.1 U | 1.4 UJ | 1.1 U |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 UJ | 0.43 U |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 U | 0.43 U |
| SVOC | 4-CHLOROANILINE | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 UJ | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 U | 0.43 U |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 U | 0.43 U |
| SVOC | 4-METHYLPHENOL | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.1 J | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 U | 0.43 U |
| SVOC | 4-NITROANILINE | MG/KG | R | R | 1.5 UJ | 1.3 UJ | 0.98 UJ | 1.7 UJ | 1.4 UJ | 1.5 UJ | 1.1 UJ | 1.2 U | 1.1 U | 2.8 UJ | 2.4 UJ | 3.4 UJ | 3.1 UJ | 3.2 UJ | 1.1 U | 1.1 U | 1.4 U | 1.1 U |
| SVOC | 4-NITROPHENOL | MG/KG | R | R | 1.5 UJ | 1.3 UJ | 0.98 UJ | 1.7 UJ | 1.4 UJ | 1.5 UJ | 1.1 UJ | 1.2 U | 1.1 U | 2.8 UJ | 2.4 UJ | 3.4 UJ | 3.1 UJ | 3.2 UJ | 1.1 U | 1.1 U | 1.4 U | 1.1 U |
| SVOC | ACENAPHTHENE | MG/KG | R | R | 0.067 J | 0.04 J | 0.39 UJ | 0.12 J | 0.057 J | 0.59 UJ | 0.032 J | 0.47 U | 0.037 J | 1.1 UJ | 0.94 UJ | 1.4 UJ | 0.59 J | 0.096 J | 0.062 J | 0.099 J | 0.32 J | 0.069 J |
| SVOC | ACENAPHTHYLENE | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.053 J | 0.034 J | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 U | 0.43 U |
| SVOC | ACETOPHENONE | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.035 J | 0.028 J | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 U | 0.43 U |
| SVOC | ANTHRACENE | MG/KG | R | R | 0.15 J | 0.056 J | 0.39 UJ | 0.21 J | 0.14 J | 0.053 J | 0.08 J | 0.026 J | 0.095 J | 0.1 J | 0.047 J | 1.4 UJ | 1.1 J | 0.16 J | 0.12 J | 0.17 J | 0.64 J | 0.11 J |
| SVOC | ATRAZINE | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 UJ | 0.43 U |
| SVOC | BENZALDEHYDE | MG/KG | 2.4 J | 1 J | 0.2 J | 0.11 J | 0.39 UJ | 0.085 J | 0.088 J | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 U | 0.43 U |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.81 J | 0.55 J | 0.37 J | 0.15 J | 0.39 UJ | 1.1 J | 0.73 J | 0.24 J | 0.28 J | 0.17 J | 0.5 J | 0.4 J | 0.16 J | 0.27 J | 3.4 J | 0.57 J | 0.51 J | 0.72 J | 2.2 J | 0.51 |
| SVOC | BENZO(A)PYRENE | MG/KG | 1 J | 0.68 J | 0.35 J | 0.15 J | 0.39 UJ | 1.1 J | 0.83 J | 0.27 J | 0.34 J | 0.24 J | 0.57 J | 0.41 J | 0.18 J | 0.3 J | 3.8 J | 0.6 J | 0.59 J | 0.74 J | 2.2 J | 0.53 |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 1.7 J | 0.73 J | 0.57 J | 0.17 J | 0.39 UJ | 1.7 J | 1.3 J | 0.26 J | 0.41 J | 0.2 J | 0.69 J | 0.52 J | 0.17 J | 0.3 J | 3.3 J | 0.66 J | 0.68 J | 0.93 J | 2.4 J | 0.63 |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.51 J | 0.31 J | 0.14 J | 0.061 J | 0.39 UJ | 0.33 J | 0.22 J | 0.23 J | 0.31 J | 0.21 J | 0.4 J | 0.32 J | 0.15 J | 0.27 J | 2.7 J | 0.38 J | 0.48 J | 0.49 J | 0.61 J | 0.15 J |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.92 J | 0.81 J | 0.34 J | 0.19 J | 0.39 UJ | 1.5 J | 0.9 J | 0.29 J | 0.27 J | 0.15 J | 0.42 J | 0.36 J | 0.22 J | 0.33 J | 3.6 J | 0.61 J | 0.57 J | 0.73 J | 2.9 J | 0.64 |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 UJ | 0.43 UJ | 1.1 UJ | 0.087 J | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 UJ | 0.42 UJ | 0.58 UJ | 0.43 U |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 U | 0.43 U |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | BWL | BWL | BWL | BWL | BWL | BWL | BWL | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | BWDD0053 | BWDD0053 | BWDD0056 | BWDD0057 | BWDD0058 | BWDD0059 | BWDD0060 | HCDD0001 | HCDD0002 | HCDD0003 | HCDD0004 | HCDD0005 | HCDD0005 | HCDD0006 | HCDD0007 | HCDD0008 | HCDD0009 | HCDD0010 | HCDD0011 | HCDD0012 |
| | | Field Sample ID | BWDD0053-SD-AA-AB-0 | BWDD0053-SD-AA-AB-1 | BWDD0056-SD-AA-AB-0 | BWDD0057-SD-AA-AB-0 | BWDD0058-SD-AA-AB-0 | BWDD0059-SD-AA-AB-0 | BWDD0060-SD-AA-AB-0 | HCDD0001-SD-AA-AB-0 | HCDD0002-SD-AA-AB-0 | HCDD0003-SD-AA-AB-0 | HCDD0004-SD-AA-AB-0 | HCDD0005-SD-AA-AB-0 | HCDD0005-SD-AA-AB-1 | HCDD0006-SD-AA-AB-0 | HCDD0007-SD-AA-AB-0 | HCDD0008-SD-AA-AB-0 | HCDD0009-SD-AA-AB-0 | HCDD0010-SD-AA-AB-0 | HCDD0011-SD-AA-AB-0 | HCDD0012-SD-AA-AB-0 |
| | | Sample Date | 8/15/05 | 8/15/05 | 9/20/05 | 9/21/05 | 9/21/05 | 9/21/05 | 9/21/05 | 6/1/05 | 6/1/05 | 6/2/05 | 6/2/05 | 6/2/05 | 6/2/05 | 6/3/05 | 6/3/05 | 6/3/05 | 6/6/05 | 6/6/05 | 6/6/05 | 6/6/05 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 U | 0.43 U |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | 0.57 J | 0.35 J | 0.11 J | 0.13 J | 0.39 UJ | 0.2 J | 0.11 J | 0.057 J | 0.25 J | 0.12 J | 0.12 J | 1.1 UJ | 0.13 J | 0.28 J | 0.29 J | 1.3 UJ | 0.15 J | 0.12 J | 0.3 J | 0.18 J |
| SVOC | CAPROLACTAM | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 U | 0.43 U |
| SVOC | CARBAZOLE | MG/KG | R | R | 0.061 J | 0.53 UJ | 0.39 UJ | 0.1 J | 0.064 J | 0.036 J | 0.035 J | 0.47 U | 0.04 J | 1.1 UJ | 0.94 UJ | 1.4 UJ | 0.53 J | 0.082 J | 0.07 J | 0.085 J | 0.36 J | 0.057 J |
| SVOC | CHRYSENE | MG/KG | 1.3 J | 0.82 J | 0.5 J | 0.21 J | 0.02 J | 1.6 J | 1.1 J | 0.32 J | 0.41 J | 0.27 J | 0.68 J | 0.62 J | 0.25 J | 0.36 J | 4.4 J | 0.76 J | 0.7 J | 0.95 J | 4.1 J | 0.62 |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | R | R | 0.064 J | 0.53 UJ | 0.39 UJ | 0.11 J | 0.081 J | 0.059 J | 0.072 J | 0.044 J | 0.11 J | 0.083 J | 0.94 UJ | 1.4 UJ | 1 J | 0.18 J | 0.13 J | 0.22 J | 0.26 J | 0.092 J |
| SVOC | DIBENZOFURAN | MG/KG | R | R | 0.046 J | 0.53 UJ | 0.39 UJ | 0.034 J | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 0.2 J | 1.3 UJ | 0.03 J | 0.047 J | 0.19 J | 0.024 J |
| SVOC | DIETHYLPHTHALATE | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 U | 0.43 U |
| SVOC | DIMETHYLPHTHALATE | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 U | 0.43 U |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | 0.3 J | 0.33 J | 0.046 J | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.021 J | 0.055 J | 0.43 U |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.041 J | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 UJ | 0.43 UJ | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 UJ | 0.42 UJ | 0.58 UJ | 0.43 U |
| SVOC | FLUORANTHENE | MG/KG | 2.1 J | 1.5 J | 0.92 J | 0.34 J | 0.043 J | 2.3 J | 1.3 J | 0.53 J | 0.52 J | 0.24 J | 0.82 | 0.67 J | 0.35 J | 0.48 J | 6.2 J | 1.1 J | 0.78 J | 1.1 J | 6.3 | 1.2 |
| SVOC | FLUORENE | MG/KG | R | R | 0.1 J | 0.056 J | 0.39 UJ | 0.1 J | 0.057 J | 0.034 J | 0.04 J | 0.47 U | 0.034 J | 1.1 UJ | 0.94 UJ | 1.4 UJ | 0.62 J | 0.11 J | 0.067 J | 0.1 J | 0.38 J | 0.053 J |
| SVOC | HEXACHLOROBENZENE | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 UJ | 0.43 U |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 U | 0.43 U |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 UJ | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 U | 0.43 U |
| SVOC | HEXACHLOROETHANE | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 U | 0.43 U |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.45 J | 0.29 J | 0.13 J | 0.056 J | 0.39 UJ | 0.32 J | 0.22 J | 0.17 J | 0.23 J | 0.14 J | 0.34 J | 0.29 J | 0.14 J | 0.22 J | 2.3 J | 0.36 J | 0.4 J | 0.49 J | 0.64 J | 0.16 J |
| SVOC | ISOPHORONE | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 U | 0.43 U |
| SVOC | NAPHTHALENE | MG/KG | R | R | 0.064 J | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 0.068 J | 1.3 UJ | 0.44 U | 0.034 J | 0.11 J | 0.023 J |
| SVOC | NITROBENZENE | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 U | 0.43 U |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 U | 0.43 U |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 UJ | 0.43 U |
| SVOC | PENTACHLOROPHENOL | MG/KG | R | R | 1.5 UJ | 1.3 UJ | 0.98 UJ | 1.7 UJ | 1.4 UJ | 1.5 UJ | 1.1 UJ | 1.2 U | 1.1 U | 2.8 UJ | 2.4 UJ | 3.4 UJ | 3.1 UJ | 3.2 UJ | 1.1 U | 1.1 U | 1.4 UJ | 1.1 U |
| SVOC | PHENANTHRENE | MG/KG | 0.95 J | 0.62 J | 0.69 J | 0.28 J | 0.025 J | 0.85 J | 0.55 J | 0.36 J | 0.44 J | 0.15 J | 0.48 | 0.48 J | 0.24 J | 0.38 J | 5.6 J | 0.94 J | 0.69 J | 0.91 J | 4.6 J | 0.5 |
| SVOC | PHENOL | MG/KG | R | R | 0.59 UJ | 0.53 UJ | 0.39 UJ | 0.69 UJ | 0.58 UJ | 0.59 UJ | 0.44 UJ | 0.47 U | 0.43 U | 1.1 UJ | 0.94 UJ | 1.4 UJ | 1.2 UJ | 1.3 UJ | 0.44 U | 0.42 U | 0.58 U | 0.43 U |
| SVOC | PYRENE | MG/KG | 1.4 J | 0.98 J | 0.67 J | 0.29 J | 0.029 J | 1.8 J | 1 J | 0.52 J | 0.68 J | 0.34 J | 0.96 J | 0.88 J | 0.41 J | 0.68 J | 7.3 J | 1.4 J | 1.1 J | 1.4 J | 5.6 | 1.2 |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 U | 0.011 U | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 U | 0.011 UJ | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 U | 0.011 U | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 U | 0.011 U | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | 1,1-DICHLOROETHANE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 U | 0.011 U | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | 1,1-DICHLOROETHENE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 U | 0.011 U | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | 1,2,3-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 UJ | 0.011 UJ | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 U | 0.011 UJ | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | 1,2-DIBROMOETHANE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 U | 0.011 UJ | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 UJ | 0.011 UJ | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | 1,2-DICHLOROETHANE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 U | 0.011 U | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 U | 0.011 U | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 UJ | 0.011 UJ | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | R | R | 0.008 J | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 UJ | 0.011 UJ | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | 1,4-DIOXANE (P-DIOXANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 UJ | 0.011 UJ | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 UJ | 0.011 UJ | 0.016 UJ | 0.01 UJ |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 U | 0.011 U | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | ACETONE | MG/KG | 0.9 J | 0.56 J | 0.14 | 0.24 | 0.013 | 0.1 J | 0.11 | 0.11 | 0.022 | 0.045 J | 0.015 UJ | 0.22 J | 0.14 J | 0.46 J | 0.64 J | 0.2 J | R | R | 0.021 UJ | R |
| VOC | BENZENE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 UJ | 0.011 UJ | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 UJ | 0.011 U | 0.016 U | 0.01 U |
| VOC | BROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 U | 0.011 U | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | BROMOFORM | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 U | 0.011 UJ | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | BROMOMETHANE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 U | 0.011 U | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | CARBON DISULFIDE | MG/KG | 0.028 J | R | 0.005 J | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.002 J | 0.011 U | 0.02 J | 0.012 J | 0.086 UJ | 0.022 J | 0.008 J | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | CARBON TETRACHLORIDE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 U | 0.011 U | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | CHLOROBENZENE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 UJ | 0.011 UJ | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | CHLOROETHANE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 U | 0.011 U | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | CHLOROFORM | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 U | 0.011 U | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | CHLOROMETHANE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 UJ | 0.011 U | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 UJ | 0.011 UJ | 0.016 UJ | 0.01 UJ |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 U | 0.011 U | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 U | 0.011 U | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | CYCLOHEXANE | MG/KG | R | R | 0.043 | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 U | 0.011 U | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 U | 0.011 U | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 U | 0.011 U | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | DICHLOROMETHANE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.002 J | 0.002 J | 0.012 U | 0.011 U | 0.049 UJ | 0.039 UJ | 0.021 J | 0.017 J | 0.008 J | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | ETHYLBENZENE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 UJ | 0.011 UJ | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | ISOPROPYLBENZENE | MG/KG | R | R | 0.051 | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 UJ | 0.011 UJ | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | METHYL ACETATE | MG/KG | R | R | 0.019 U | 0.024 U | 0.004 J | 0.019 J | 0.015 J | 0.021 U | 0.013 U | 0.012 UJ | 0.003 J | 0.017 J | 0.011 J | 0.086 UJ | 0.063 J | 0.015 J | 0.011 UJ | 0.011 UJ | 0.005 J | 0.01 UJ |
| VOC | METHYL ETHYL KETONE | MG/KG | 0.38 J | 0.23 J | 0.019 U | 0.1 | 0.011 U | 0.038 J | 0.04 | 0.034 | 0.007 J | 0.013 J | 0.005 J | 0.069 J | 0.039 J | 0.14 J | 0.2 J | 0.061 J | 0.003 J | 0.002 J | 0.008 J | 0.003 J |
| VOC | METHYLCYCLOHEXANE | MG/KG | R | R | 0.074 | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 U | 0.011 U | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 U | 0.011 U | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | STYRENE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 UJ | 0.011 UJ | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | TETRACHLOROETHENE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 U | 0.011 UJ | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | TOLUENE | MG/KG | 0.031 J | 0.034 J | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 UJ | 0.011 UJ | 0.049 UJ | 0.006 J | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 U | 0.011 U | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 U | 0.011 U | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 U | 0.011 U | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 U | 0.011 U | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |
| VOC | VINYL CHLORIDE | MG/KG | R | R | 0.019 U | 0.024 U | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 UJ | 0.011 U | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 UJ | 0.011 UJ | 0.016 UJ | 0.01 UJ |
| VOC | XYLENE, O- | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES, M & P | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | R | R | 0.005 J | 0.005 J | 0.011 U | 0.024 UJ | 0.016 U | 0.021 U | 0.013 U | 0.012 UJ | 0.011 UJ | 0.049 UJ | 0.039 UJ | 0.086 UJ | 0.054 UJ | 0.031 UJ | 0.011 U | 0.011 U | 0.016 U | 0.01 U |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCDD0013 | HCDD0014 | HCDD0014 | HCDD0015 | HCDD0016 | HCDD0017 | HCDD0018 | HCDD0019 | HCDD0020 | HCDD0021 | HCDD0022 | HCDD0023 | HCDD0024 | HCDD0025 | HCDD0026 | HCDD0026 | HCDD0027 | HCDD0028 | HCDD0029 | HCDD0030 |
| | | Field Sample ID | HCDD0013-SD-AA-AB-0 | HCDD0014-SD-AA-AB-0 | HCDD0014-SD-AA-AB-1 | HCDD0015-SD-AA-AB-0 | HCDD0016-SD-AA-AB-0 | HCDD0017-SD-AA-AB-0 | HCDD0018-SD-AA-AB-0 | HCDD0019-SD-AA-AB-0 | HCDD0020-SD-AA-AB-0 | HCDD0021-SD-AA-AB-0 | HCDD0022-SD-AA-AB-0 | HCDD0023-SD-AA-AB-0 | HCDD0024-SD-AA-AB-0 | HCDD0025-SD-AA-AB-0 | HCDD0026-SD-AA-AB-0 | HCDD0026-SD-AA-AB-1 | HCDD0027-SD-AA-AB-0 | HCDD0028-SD-AA-AB-0 | HCDD0029-SD-AA-AB-0 | HCDD0030-SD-AA-AB-0 |
| | | Sample Date | 6/7/05 | 6/7/05 | 6/7/05 | 6/7/05 | 6/7/05 | 6/8/05 | 6/8/05 | 6/8/05 | 6/9/05 | 6/9/05 | 6/9/05 | 6/9/05 | 6/13/05 | 6/13/05 | 6/13/05 | 6/13/05 | 6/14/05 | 6/14/05 | 6/14/05 | 6/15/05 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 1110 | 3420 | 6470 J | 4510 J | 4770 J | 1860 | 2450 J | 6190 J | 16400 J | 14300 J | 5760 | 10500 J | 2930 | 4910 | 1420 | 1170 | 2880 | 1690 | 3730 | 11000 J |
| METALS | ANTIMONY | MG/KG | 3.8 J | 2.1 J | 1.9 J | 2.9 J | 2.1 J | 1 J | 1.7 UJ | 4.2 J | 11 J | 9.1 J | 0.92 U | 2.3 UJ | 2.4 J | 1.7 U | 1.4 U | 1.4 U | 1.6 U | 1.2 U | 2.7 J | 7.4 J |
| METALS | ARSENIC | MG/KG | 45.1 | 13.4 J | 30 J | 26.6 J | 18.2 J | 46.4 | 62.2 J | 558 J | 1440 J | 1990 J | 12.3 | 43.7 J | 38.8 J | 3.9 J | 1.5 UJ | 1.4 UJ | 13.7 J | 15.1 J | 28.1 J | 592 J |
| METALS | BARIUM | MG/KG | 1930 | 119 | 142 J | 140 J | 103 J | 2650 | 879 J | 7170 J | 7950 J | 2420 J | 63.6 | 207 J | 222 | 88.1 | 54 | 40.9 J | 82.4 | 83.9 | 142 | 525 J |
| METALS | BERYLLIUM | MG/KG | 0.04 U | 0.11 J | 0.25 J | 0.15 J | 0.1 J | 0.11 J | 0.23 J | 0.39 J | 1 J | 0.9 J | 0.15 J | 0.52 J | 0.21 J | 0.34 J | 0.14 J | 0.13 J | 0.24 J | 0.1 J | 0.22 J | 0.77 J |
| METALS | CADMIUM | MG/KG | 0.37 J | 0.39 J | 0.25 UJ | 0.87 J | 0.31 J | 0.96 J | 1.4 J | 4 J | 12.4 J | 14.2 J | 0.28 J | 1.8 J | 1.5 J | 0.32 J | 0.23 J | 0.21 J | 0.54 J | 0.24 J | 0.96 J | 4.6 J |
| METALS | CALCIUM | MG/KG | 649 J | 4640 J | 7010 J | 9510 J | 5040 J | 1720 | 4830 J | 4520 J | 14300 J | 11900 J | 1070 J | 7340 J | 3650 | 4400 | 16400 | 7700 | 7130 | 2490 | 3070 | 9230 J |
| METALS | CHROMIUM | MG/KG | 300 J | 34.5 J | 33.6 J | 57.2 J | 35.2 J | 377 | 265 J | 1220 J | 3430 J | 2280 J | 24 | 132 J | 79.6 | 8 | 4 | 3.6 | 29.3 | 32.6 | 123 | 255 J |
| METALS | COBALT | MG/KG | 0.91 J | 0.8 U | 1.1 UJ | 1.3 UJ | 1.1 UJ | 1.2 J | 3.4 J | 6.5 J | 7.5 J | 8.7 J | 1.2 J | 1.5 UJ | 1.8 J | 0.75 J | 0.64 J | 0.49 J | 2.3 J | 1.8 J | 2.6 J | 7.1 J |
| METALS | COPPER | MG/KG | 18.7 J | 6.2 J | 6.3 J | 13 J | 7.6 J | 23.3 | 37.9 J | 73.9 J | 493 J | 310 J | 2.1 J | 26.4 J | R | 5.2 J | 2.2 J | 1.6 J | 12.2 J | 7.3 J | 12.5 J | 95.2 J |
| METALS | CYANIDE | MG/KG | 14.8 | 1.9 | 4 J | 1.5 J | 0.89 UJ | 51 | 11.4 J | 251 J | 213 J | 248 J | 0.61 U | 2.8 J | 6.3 | 0.83 U | 0.73 U | 0.7 U | 1 | 0.59 U | 2.2 | 8.2 J |
| METALS | IRON | MG/KG | 3750 | 7790 J | 31600 J | 7150 J | 9450 J | 3740 | 6270 J | 17000 J | 20300 J | 36000 J | 6590 | 7960 J | 5470 | 2240 | 1680 | 1320 | 7020 | 5080 | 8680 | 22500 J |
| METALS | LEAD | MG/KG | 2190 | 169 J | 139 J | 259 J | 290 J | 5390 | 1530 J | 12900 J | 39200 J | 26600 J | 145 | 1920 J | 769 | 29.2 | 13.2 | 12.6 | 243 | 411 | 954 | 2510 J |
| METALS | MAGNESIUM | MG/KG | 137 J | 122 J | 165 J | 187 J | 126 J | 62 J | 137 J | 321 J | 465 J | 542 J | 86 J | 265 J | 161 J | 185 J | 360 J | 275 J | 3260 | 1600 | 1270 J | 657 J |
| METALS | MANGANESE | MG/KG | 24.9 | 24.3 | 43.1 J | 35.7 J | 27.8 J | 14.1 | 38.1 J | 130 J | 100 J | 162 J | 57 | 26.8 J | 29 | 27.8 | 20.5 | 17.6 | 103 | 32.2 | 66.1 | 180 J |
| METALS | MERCURY | MG/KG | 0.13 | 0.1 J | 0.12 UJ | 0.094 UJ | 0.095 UJ | 0.5 | 0.47 J | 1.3 J | 1.7 J | 1.9 J | 0.053 U | 0.18 UJ | 0.093 U | 0.063 U | 0.065 U | 0.066 U | 0.067 U | 0.042 U | 0.06 U | 0.29 UJ |
| METALS | NICKEL | MG/KG | 1.3 J | 1.3 J | 1.6 J | 2.8 J | 1.3 J | 1.9 J | 4.4 J | 10.6 J | 34.8 J | 24.3 J | 3.2 J | 6.3 J | 3.5 J | 2.1 J | 1.3 J | 0.84 J | 5 J | 3.7 J | 5.6 J | 13 J |
| METALS | POTASSIUM | MG/KG | 90.8 J | 126 U | 180 UJ | 199 UJ | 173 UJ | 97.2 U | 180 UJ | 232 UJ | 511 UJ | 434 UJ | 95.1 U | 237 UJ | 133 U | 119 U | 98.8 U | 97.6 U | 428 J | 723 J | 1330 J | 454 UJ |
| METALS | SELENIUM | MG/KG | 0.8 UJ | 1.1 UJ | 1.6 UJ | 1.8 UJ | 1.5 UJ | 1.1 J | 2 UJ | 3.5 J | 5.1 UJ | 5.4 J | 0.94 UJ | 2.3 UJ | 1.6 U | 1.4 U | 1.2 U | 1.1 U | 1.3 U | 0.93 U | 1.6 U | 5.3 UJ |
| METALS | SILVER | MG/KG | 0.38 U | 0.53 U | 0.76 UJ | 0.84 UJ | 0.73 UJ | 0.41 U | 0.76 UJ | 0.98 UJ | 2.2 UJ | 1.8 UJ | 0.4 U | 1 UJ | 0.56 U | 0.51 U | 0.44 J | 0.41 U | 0.46 U | 0.34 U | 0.58 U | 1.9 UJ |
| METALS | SODIUM | MG/KG | 103 U | 145 U | 207 UJ | 229 UJ | 198 UJ | 112 U | 207 UJ | 267 UJ | 588 UJ | 499 UJ | 109 U | 412 J | 223 U | 200 U | 166 U | 309 J | 330 J | 264 J | 228 U | 764 UJ |
| METALS | THALLIUM | MG/KG | 1.4 U | 1.9 U | 2.7 UJ | 3 UJ | 2.6 UJ | 1.5 UJ | 2.7 UJ | 3.5 UJ | 7.7 UJ | 6.5 UJ | 1.4 U | 3.6 UJ | 2.8 UJ | 2.5 UJ | 2.1 UJ | 2.1 UJ | 2.3 U | 1.7 U | 2.9 U | 9.7 UJ |
| METALS | VANADIUM | MG/KG | 4.5 J | 7.2 J | 21.5 J | 7.8 J | 7.7 J | 4.7 | 7.9 J | 19.6 J | 32.3 J | 40 J | 8.2 J | 18.6 J | 7.2 J | 7.4 J | 3.3 J | 2.4 J | 11.8 J | 8.9 J | 10.4 J | 24.3 J |
| METALS | ZINC | MG/KG | 95.5 J | 35.2 J | 32.6 J | 91.6 J | 42.4 J | 82.4 | 190 J | 597 J | 1420 J | 1440 J | 19.4 | 78.6 J | 116 | 10.6 | 4.6 J | 4.3 J | 79 | 29 | 111 | 472 J |
| PEST/PCB | 4,4'-DDD | MG/KG | 0.0042 U | 0.0062 U | 0.0082 UJ | 0.0085 UJ | 0.0072 UJ | 0.0047 U | 0.018 J | 0.0067 J | 0.011 J | 0.01 J | 0.0046 U | 0.012 UJ | 0.0083 J | 0.0057 UJ | 0.0049 UJ | 0.0048 UJ | 0.0043 J | 0.019 | 0.0056 U | 0.021 UJ |
| PEST/PCB | 4,4'-DDE | MG/KG | 0.0042 U | 0.0062 U | 0.0082 UJ | 0.0085 UJ | 0.0072 UJ | 0.0047 U | 0.0071 J | 0.0089 UJ | 0.021 UJ | 0.019 UJ | 0.0046 U | 0.012 UJ | 0.0065 UJ | 0.0057 UJ | 0.0049 UJ | 0.0048 UJ | 0.0048 U | 0.0021 J | 0.0056 U | 0.021 UJ |
| PEST/PCB | 4,4'-DDT | MG/KG | 0.0042 U | 0.0062 U | 0.0082 UJ | 0.0085 UJ | 0.0072 UJ | 0.0047 U | 0.0077 UJ | 0.0089 UJ | 0.021 UJ | 0.019 UJ | 0.0046 U | 0.012 UJ | 0.0065 UJ | 0.0057 UJ | 0.0049 UJ | 0.0048 UJ | 0.0085 J | 0.0023 J | 0.0056 U | 0.021 UJ |
| PEST/PCB | ALDRIN | MG/KG | 0.0022 U | 0.0032 U | 0.0042 UJ | 0.0044 UJ | 0.0037 UJ | 0.0024 U | 0.0039 UJ | 0.0046 UJ | 0.011 UJ | 0.01 UJ | 0.0024 U | 0.0061 UJ | 0.0033 UJ | 0.0029 UJ | 0.0025 UJ | 0.0025 UJ | 0.0025 U | 0.002 U | 0.0029 U | 0.011 UJ |
| PEST/PCB | ALPHA-BHC | MG/KG | 0.0022 U | 0.0032 U | 0.0042 UJ | 0.0044 UJ | 0.0037 UJ | 0.0024 U | 0.0039 UJ | 0.0046 UJ | 0.011 UJ | 0.01 UJ | 0.0024 U | 0.0061 UJ | 0.0033 UJ | 0.0029 UJ | 0.0025 UJ | 0.0025 UJ | 0.0025 U | 0.002 U | 0.0029 U | 0.011 UJ |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | 0.0022 U | 0.0032 U | 0.0042 UJ | 0.0044 UJ | 0.0037 UJ | 0.0024 U | 0.0032 J | 0.0033 J | 0.011 UJ | 0.01 UJ | 0.0024 U | 0.0061 UJ | 0.0046 J | 0.0029 UJ | 0.0025 UJ | 0.0025 UJ | 0.0062 | 0.002 U | 0.0024 J | 0.006 J |
| PEST/PCB | AROCLOR-1016 | MG/KG | 0.042 U | 0.062 U | 0.082 UJ | 0.085 UJ | 0.072 UJ | 0.047 U | 0.077 UJ | 0.089 UJ | 0.21 UJ | 0.19 UJ | 0.046 U | 0.12 UJ | 0.065 UJ | 0.057 UJ | 0.049 UJ | 0.048 UJ | 0.048 U | 0.039 U | 0.056 U | 0.21 UJ |
| PEST/PCB | AROCLOR-1221 | MG/KG | 0.086 U | 0.13 U | 0.17 UJ | 0.17 UJ | 0.15 UJ | 0.096 U | 0.16 UJ | 0.18 UJ | 0.42 UJ | 0.39 UJ | 0.093 U | 0.24 UJ | 0.13 UJ | 0.12 UJ | 0.1 UJ | 0.097 UJ | 0.098 U | 0.079 U | 0.11 U | 0.42 UJ |
| PEST/PCB | AROCLOR-1232 | MG/KG | 0.042 U | 0.062 U | 0.082 UJ | 0.085 UJ | 0.072 UJ | 0.047 U | 0.077 UJ | 0.089 UJ | 0.21 UJ | 0.19 UJ | 0.046 U | 0.12 UJ | 0.065 UJ | 0.057 UJ | 0.049 UJ | 0.048 UJ | 0.048 U | 0.039 U | 0.056 U | 0.21 UJ |
| PEST/PCB | AROCLOR-1242 | MG/KG | 0.042 U | 0.062 U | 0.082 UJ | 0.085 UJ | 0.072 UJ | 0.047 U | 0.077 UJ | 0.089 UJ | 0.21 UJ | 0.19 UJ | 0.046 U | 0.12 UJ | 0.065 UJ | 0.057 UJ | 0.049 UJ | 0.048 UJ | 0.048 U | 0.039 U | 0.056 U | 0.21 UJ |
| PEST/PCB | AROCLOR-1248 | MG/KG | 0.042 U | 0.062 U | 0.082 UJ | 0.085 UJ | 0.072 UJ | 0.047 U | 0.077 UJ | 0.089 UJ | 0.21 UJ | 0.19 UJ | 0.046 U | 0.12 UJ | 0.065 UJ | 0.057 UJ | 0.049 UJ | 0.048 UJ | 0.048 U | 0.039 U | 0.056 U | 0.21 UJ |
| PEST/PCB | AROCLOR-1254 | MG/KG | 0.042 U | 0.062 U | 0.082 UJ | 0.085 UJ | 0.072 UJ | 0.047 U | 0.077 UJ | 0.089 UJ | 0.21 UJ | 0.19 UJ | 0.046 U | 0.12 UJ | 0.065 UJ | 0.057 UJ | 0.049 UJ | 0.048 UJ | 0.12 | 0.032 J | 0.081 | 0.21 UJ |
| PEST/PCB | AROCLOR-1260 | MG/KG | 0.042 U | 0.062 U | 0.082 UJ | 0.085 UJ | 0.072 UJ | 0.047 U | 0.078 J | 0.17 J | 0.21 UJ | 0.19 UJ | 0.046 U | 0.12 UJ | 0.047 J | 0.057 UJ | 0.049 UJ | 0.048 UJ | 0.037 J | 0.039 U | 0.056 U | 0.21 UJ |
| PEST/PCB | AROCLOR-1262 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1268 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | BETA-BHC | MG/KG | 0.0022 U | 0.0032 U | 0.0042 UJ | 0.0044 UJ | 0.0037 UJ | 0.0024 U | 0.0039 UJ | 0.0046 UJ | 0.011 UJ | 0.01 UJ | 0.0021 J | 0.0061 UJ | 0.0033 UJ | 0.0029 UJ | 0.0025 UJ | 0.0025 UJ | 0.0025 U | 0.002 U | 0.0029 U | 0.011 UJ |
| PEST/PCB | DELTA-BHC | MG/KG | 0.0022 U | 0.0032 U | 0.0042 UJ | 0.0044 UJ | 0.0037 UJ | 0.0024 U | 0.0039 UJ | 0.0046 UJ | 0.011 UJ | 0.01 UJ | 0.0024 U | 0.0061 UJ | 0.0033 UJ | 0.0029 UJ | 0.0025 UJ | 0.0025 UJ | 0.0025 U | 0.002 U | 0.0029 U | 0.011 UJ |
| PEST/PCB | DIELDRIN | MG/KG | 0.0042 U | 0.0062 U | 0.0082 UJ | 0.0085 UJ | 0.0072 UJ | 0.0047 U | 0.0077 UJ | 0.0089 UJ | 0.021 UJ | 0.019 UJ | 0.0046 U | 0.012 UJ | 0.0065 UJ | 0.0057 UJ | 0.0049 UJ | 0.0048 UJ | 0.0048 U | 0.0039 U | 0.0056 U | 0.021 UJ |
| PEST/PCB | ENDOSULFAN I | MG/KG | 0.0022 U | 0.0032 U | 0.0042 UJ | 0.0044 UJ | 0.0037 UJ | 0.0024 U | 0.0039 UJ | 0.0046 UJ | 0.011 UJ | 0.01 UJ | 0.0024 U | 0.0061 UJ | 0.0033 UJ | 0.0029 UJ | 0.0025 UJ | 0.0025 UJ | 0.0025 U | 0.002 U | 0.0029 U | 0.011 UJ |
| PEST/PCB | ENDOSULFAN II | MG/KG | 0.0042 UJ | 0.0062 UJ | 0.0082 UJ | 0.0085 UJ | 0.0072 UJ | 0.0047 U | 0.0077 UJ | 0.0089 UJ | 0.021 UJ | 0.019 UJ | 0.0046 U | 0.012 UJ | 0.0065 UJ | 0.0057 UJ | 0.0049 UJ | 0.0048 UJ | 0.0048 U | 0.0039 U | 0.0056 U | 0.021 UJ |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | 0.0042 U | 0.0062 U | 0.0082 UJ | 0.0085 UJ | 0.0072 UJ | 0.0047 U | 0.0077 UJ | 0.0089 UJ | 0.021 UJ | 0.019 UJ | 0.0046 U | 0.012 UJ | 0.0065 UJ | 0.0057 UJ | 0.0049 UJ | 0.0048 UJ | 0.0048 U | 0.0039 U | 0.0056 U | 0.021 UJ |
| PEST/PCB | ENDRIN | MG/KG | 0.0042 U | 0.0062 U | 0.0082 UJ | 0.0085 UJ | 0.0072 UJ | 0.0047 U | 0.0077 UJ | 0.0089 UJ | 0.021 UJ | 0.019 UJ | 0.0046 U | 0.012 UJ | 0.0065 UJ | 0.0057 UJ | 0.0049 UJ | 0.0048 UJ | 0.0048 U | 0.0039 U | 0.0056 U | 0.021 UJ |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | 0.0042 U | 0.0062 U | 0.0082 UJ | 0.0085 UJ | 0.0072 UJ | 0.0047 U | 0.0077 UJ | 0.0067 J | 0.021 UJ | 0.019 UJ | 0.0046 U | 0.012 UJ | 0.0065 UJ | 0.0057 UJ | 0.0049 UJ | 0.0048 UJ | 0.0048 U | 0.0039 U | 0.0056 U | 0.021 UJ |
| PEST/PCB | ENDRIN KETONE | MG/KG | 0.0042 U | 0.0062 U | 0.0082 UJ | 0.0085 UJ | 0.0072 UJ | 0.0047 U | 0.0077 UJ | 0.0089 UJ | 0.021 UJ | 0.019 UJ | 0.0046 U | 0.012 UJ | 0.0065 UJ | 0.0057 UJ | 0.0049 UJ | 0.0048 UJ | 0.0048 U | 0.0039 U | 0.0056 U | 0.021 UJ |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | 0.0022 U | 0.0032 U | 0.0042 UJ | 0.0044 UJ | 0.0037 UJ | 0.0024 U | 0.0039 UJ | 0.0046 UJ | 0.011 UJ | 0.01 UJ | 0.0024 U | 0.0061 UJ | 0.0033 UJ | 0.0029 UJ | 0.0025 UJ | 0.0025 UJ | 0.0025 U | 0.002 U | 0.0029 U | 0.011 UJ |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | 0.0022 U | 0.0032 U | 0.0042 UJ | 0.0044 UJ | 0.0037 UJ | 0.0024 U | 0.0041 J | 0.0046 UJ | 0.011 UJ | 0.01 UJ | 0.0024 U | 0.0061 UJ | 0.0061 J | 0.0029 UJ | 0.0025 UJ | 0.0025 UJ | 0.0066 J | 0.002 U | 0.0032 J | 0.011 UJ |
| PEST/PCB | HEPTACHLOR | MG/KG | 0.0022 U | 0.0032 U | 0.0042 UJ | 0.0044 UJ | 0.0037 UJ | 0.0024 U | 0.0039 UJ | 0.0046 UJ | 0.011 UJ | 0.01 UJ | 0.0024 U | 0.0061 UJ | 0.0033 UJ | 0.0029 UJ | 0.0025 UJ | 0.0025 UJ | 0.0025 U | 0.002 U | 0.0029 U | 0.011 UJ |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | 0.0022 U | 0.0032 U | 0.0042 UJ | 0.0044 UJ | 0.0037 UJ | 0.0024 U | 0.0019 J | 0.0046 UJ | 0.011 UJ | 0.01 UJ | 0.0024 U | 0.0061 UJ | 0.0033 UJ | 0.0029 UJ | 0.0025 UJ | 0.0025 UJ | 0.0025 U | 0.002 U | 0.0029 U | 0.011 UJ |
| PEST/PCB | METHOXYCHLOR | MG/KG | 0.022 UJ | 0.032 UJ | 0.042 UJ | 0.044 UJ | 0.037 UJ | 0.024 U | 0.039 UJ | 0.046 UJ | 0.11 UJ | 0.1 UJ | 0.024 U | 0.061 UJ | 0.033 UJ | 0.029 UJ | 0.025 UJ | 0.025 UJ | 0.025 U | 0.02 U | 0.029 U | 0.11 UJ |
| PEST/PCB | TOXAPHENE | MG/KG | 0.22 U | 0.32 U | 0.42 UJ | 0.44 UJ | 0.37 UJ | 0.24 U | 0.39 UJ | 0.46 UJ | 1.1 UJ | 1 UJ | 0.24 U | 0.61 UJ | 0.33 UJ | 0.29 UJ | 0.25 UJ | 0.25 UJ | 0.25 U | 0.2 U | 0.29 U | 1.1 UJ |
| SVOC | 1,1'-BIPHENYL | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.11 J | 0.052 J | 0.56 U | 2 UJ |
| SVOC | 1,2,4,5-TETRACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 U | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 U | 0.56 U | 2 UJ |
| SVOC | 2,3,4,6-TETRACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | 1.1 U | 1.6 U | 2.1 UJ | 2.1 UJ | 1.8 UJ | 1.2 U | 1.9 UJ | 2.2 UJ | 5.2 UJ | 4.9 UJ | 1.2 U | 3 UJ | 1.6 UJ | 1.4 UJ | 1.2 UJ | 1.2 UJ | 1.2 U | 0.98 U | 1.4 U | 5.2 UJ |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 U | 0.56 U | 2 UJ |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 U | 0.56 U | 2 UJ |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 U | 0.56 U | 2 UJ |
| SVOC | 2,4-DINITROPHENOL | MG/KG | 1.1 U | 1.6 U | 2.1 UJ | 2.1 UJ | 1.8 UJ | 1.2 UJ | 1.9 UJ | 2.2 UJ | 5.2 UJ | 4.9 UJ | 1.2 UJ | 3 UJ | 1.6 UJ | 1.4 UJ | 1.2 UJ | 1.2 UJ | 1.2 U | 0.98 UJ | 1.4 UJ | 5.2 UJ |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 UJ | 0.56 UJ | 2 UJ |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 U | 0.56 U | 2 UJ |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 U | 0.56 U | 2 UJ |
| SVOC | 2-CHLOROPHENOL | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 U | 0.56 U | 2 UJ |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | 0.42 U | 0.62 U | 0.18 J | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.026 J | 0.43 J | 0.099 J | 0.56 U | 2 UJ |
| SVOC | 2-METHYLPHENOL | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 U | 0.56 U | 2 UJ |
| SVOC | 2-NITROANILINE | MG/KG | 1.1 U | 1.6 U | 2.1 UJ | 2.1 UJ | 1.8 UJ | 1.2 U | 1.9 UJ | 2.2 UJ | 5.2 UJ | 4.9 UJ | 1.2 U | 3 UJ | 1.6 UJ | 1.4 UJ | 1.2 UJ | 1.2 UJ | 1.2 U | 0.98 U | 1.4 U | 5.2 UJ |
| SVOC | 2-NITROPHENOL | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 U | 0.56 U | 2 UJ |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 UJ | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 UJ | 0.56 U | 2 UJ |
| SVOC | 3-NITROANILINE | MG/KG | 1.1 U | 1.6 U | 2.1 UJ | 2.1 UJ | 1.8 UJ | 1.2 U | 1.9 UJ | 2.2 UJ | 5.2 UJ | 4.9 UJ | 1.2 U | 3 UJ | 1.6 UJ | 1.4 UJ | 1.2 UJ | 1.2 UJ | 1.2 U | 0.98 U | 1.4 U | 5.2 UJ |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | 1.1 U | 1.6 U | 2.1 UJ | 2.1 UJ | 1.8 UJ | 1.2 U | 1.9 UJ | 2.2 UJ | 5.2 UJ | 4.9 UJ | 1.2 U | 3 UJ | 1.6 UJ | 1.4 UJ | 1.2 UJ | 1.2 UJ | 1.2 U | 0.98 U | 1.4 U | 5.2 UJ |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 U | 0.56 U | 2 UJ |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 U | 0.56 U | 2 UJ |
| SVOC | 4-CHLOROANILINE | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 U | 0.56 U | 2 UJ |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 U | 0.56 U | 2 UJ |
| SVOC | 4-METHYLPHENOL | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.15 J | 0.39 U | 0.56 UJ | 2 UJ |
| SVOC | 4-NITROANILINE | MG/KG | 1.1 U | 1.6 U | 2.1 UJ | 2.1 UJ | 1.8 UJ | 1.2 U | 1.9 UJ | 2.2 UJ | 5.2 UJ | 4.9 UJ | 1.2 UJ | 3 UJ | 1.6 UJ | 1.4 UJ | 1.2 UJ | 1.2 UJ | 1.2 U | 0.98 UJ | 1.4 UJ | 5.2 UJ |
| SVOC | 4-NITROPHENOL | MG/KG | 1.1 U | 1.6 U | 2.1 UJ | 2.1 UJ | 1.8 UJ | 1.2 U | 1.9 UJ | 2.2 UJ | 5.2 UJ | 4.9 UJ | 1.2 U | 3 UJ | 1.6 UJ | 1.4 UJ | 1.2 UJ | 1.2 UJ | 1.2 U | 0.98 U | 1.4 UJ | 5.2 UJ |
| SVOC | ACENAPHTHENE | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.098 J | 0.083 J | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.14 J | 0.066 J | 0.064 J | 1.3 | 0.62 | 0.56 U | 2 UJ |
| SVOC | ACENAPHTHYLENE | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.04 J | 0.56 U | 2 UJ |
| SVOC | ACETOPHENONE | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 0.059 J | 0.65 UJ | 0.031 J | 0.49 UJ | 0.48 UJ | 0.03 J | 0.019 J | 0.56 U | 0.12 J |
| SVOC | ANTHRACENE | MG/KG | 0.067 J | 0.028 J | 0.062 J | 0.067 J | 0.72 UJ | 0.47 U | 0.16 J | 0.14 J | 0.16 J | 0.11 J | 0.46 U | 1.2 UJ | 0.65 UJ | 0.26 J | 0.067 J | 0.076 J | 1.1 | 0.83 | 0.048 J | 2 UJ |
| SVOC | ATRAZINE | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 U | 0.56 U | 2 UJ |
| SVOC | BENZALDEHYDE | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.13 J | 0.17 J | 0.42 J | 2.1 UJ | 0.43 J | 0.46 U | 0.49 J | 0.12 J | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.097 J | 0.028 J | 0.27 J | 0.92 J |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.41 J | 0.15 J | 0.26 J | 0.35 J | 0.15 J | 0.16 J | 0.97 J | 0.76 J | 0.95 J | 0.69 J | 0.46 U | 1.2 UJ | 0.16 J | 0.73 J | 0.18 J | 0.25 J | 3.2 | 2 | 0.26 J | 0.22 J |
| SVOC | BENZO(A)PYRENE | MG/KG | 0.45 | 0.16 J | 0.27 J | 0.36 J | 0.14 J | 0.11 J | 1.1 J | 0.88 J | 1.1 J | 0.9 J | 0.46 U | 1.2 UJ | 0.19 J | 0.63 J | 0.14 J | 0.25 J | 1.5 | 2 | 0.25 J | 0.31 J |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 0.46 | 0.26 J | 0.39 J | 0.32 J | 0.13 J | 0.14 J | 1 J | 0.99 J | 1.6 J | 1 J | 0.03 J | 1.2 UJ | 0.23 J | 0.53 J | 0.12 J | 0.21 J | 2.1 | 2.1 | 0.31 J | 0.45 J |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.14 J | 0.053 J | 0.084 J | 0.15 J | 0.72 UJ | 0.075 J | 0.3 J | 0.33 J | 0.38 J | 0.34 J | 0.46 U | 1.2 UJ | 0.13 J | 0.33 J | 0.087 J | 0.18 J | 0.65 | 0.86 | 0.13 J | 0.28 J |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.56 | 0.16 J | 0.3 J | 0.6 J | 0.21 J | 0.095 J | 1.4 J | 1 J | 1.1 J | 1.1 J | 0.032 J | 1.2 UJ | 0.25 J | 0.74 J | 0.16 J | 0.27 J | 2.3 | 2.6 | 0.39 J | 0.39 J |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 0.1 J | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 UJ | 0.56 U | 2 UJ |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 U | 0.56 U | 2 UJ |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCDD0013 | HCDD0014 | HCDD0014 | HCDD0015 | HCDD0016 | HCDD0017 | HCDD0018 | HCDD0019 | HCDD0020 | HCDD0021 | HCDD0022 | HCDD0023 | HCDD0024 | HCDD0025 | HCDD0026 | HCDD0026 | HCDD0027 | HCDD0028 | HCDD0029 | HCDD0030 |
| | | Field Sample ID | HCDD0013-SD-AA-AB-0 | HCDD0014-SD-AA-AB-0 | HCDD0014-SD-AA-AB-1 | HCDD0015-SD-AA-AB-0 | HCDD0016-SD-AA-AB-0 | HCDD0017-SD-AA-AB-0 | HCDD0018-SD-AA-AB-0 | HCDD0019-SD-AA-AB-0 | HCDD0020-SD-AA-AB-0 | HCDD0021-SD-AA-AB-0 | HCDD0022-SD-AA-AB-0 | HCDD0023-SD-AA-AB-0 | HCDD0024-SD-AA-AB-0 | HCDD0025-SD-AA-AB-0 | HCDD0026-SD-AA-AB-0 | HCDD0026-SD-AA-AB-1 | HCDD0027-SD-AA-AB-0 | HCDD0028-SD-AA-AB-0 | HCDD0029-SD-AA-AB-0 | HCDD0030-SD-AA-AB-0 |
| | | Sample Date | 6/7/05 | 6/7/05 | 6/7/05 | 6/7/05 | 6/7/05 | 6/8/05 | 6/8/05 | 6/8/05 | 6/9/05 | 6/9/05 | 6/9/05 | 6/9/05 | 6/13/05 | 6/13/05 | 6/13/05 | 6/13/05 | 6/14/05 | 6/14/05 | 6/14/05 | 6/15/05 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 U | 0.56 U | 2 UJ |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | 0.061 J | 0.11 J | 0.16 J | 0.041 J | 0.044 J | 0.47 U | 0.1 J | 0.14 J | 0.17 J | 0.19 J | 0.025 J | 0.056 J | 0.085 J | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.31 J | 0.06 J | 0.12 J | 0.25 J |
| SVOC | CAPROLACTAM | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 UJ | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 UJ | 0.56 UJ | 2 UJ |
| SVOC | CARBAZOLE | MG/KG | 0.032 J | 0.62 U | 0.068 J | 0.052 J | 0.038 J | 0.47 U | 0.11 J | 0.12 J | 0.14 J | 0.11 J | 0.46 U | 1.2 UJ | 0.65 UJ | 0.11 J | 0.032 J | 0.035 J | 0.46 J | 0.22 J | 0.039 J | 2 UJ |
| SVOC | CHRYSENE | MG/KG | 0.45 | 0.2 J | 0.34 J | 0.41 J | 0.17 J | 0.23 J | 1.2 J | 1.1 J | 1.2 J | 1.1 J | 0.029 J | 1.2 UJ | 0.25 J | 0.74 J | 0.21 J | 0.3 J | 3.6 | 2.1 J | 0.36 J | 0.4 J |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.045 J | 0.62 U | 0.039 J | 0.84 UJ | 0.72 UJ | 0.47 U | 0.098 J | 0.095 J | 0.16 J | 1.9 UJ | 0.46 U | 1.2 UJ | 0.031 J | 0.15 J | 0.024 J | 0.065 J | 0.19 J | 0.38 J | 0.04 J | 2 UJ |
| SVOC | DIBENZOFURAN | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.044 J | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.052 J | 0.49 UJ | 0.48 UJ | 0.89 | 0.23 J | 0.56 U | 2 UJ |
| SVOC | DIETHYLPHTHALATE | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 U | 0.56 U | 2 UJ |
| SVOC | DIMETHYLPHTHALATE | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 U | 0.56 U | 2 UJ |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 U | 0.56 U | 2 UJ |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 UJ | 0.56 U | 2 UJ |
| SVOC | FLUORANTHENE | MG/KG | 0.91 | 0.43 J | 1.2 J | 0.94 J | 0.44 J | 0.17 J | 2.1 J | 1.9 J | 2.3 J | 2.1 J | 0.043 J | 1.2 UJ | 0.4 J | 1.4 J | 0.44 J | 0.65 J | 6.4 | 2.8 | 0.73 | 0.64 J |
| SVOC | FLUORENE | MG/KG | 0.42 U | 0.62 U | 0.05 J | 0.051 J | 0.72 UJ | 0.47 U | 0.11 J | 0.094 J | 0.11 J | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.12 J | 0.054 J | 0.077 J | 1.3 | 0.57 | 0.56 U | 2 UJ |
| SVOC | HEXACHLOROBENZENE | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 U | 0.56 U | 2 UJ |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 U | 0.56 U | 2 UJ |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | 0.42 UJ | 0.62 UJ | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 UJ | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 U | 0.56 U | 2 UJ |
| SVOC | HEXACHLOROETHANE | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 U | 0.56 U | 2 UJ |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.14 J | 0.051 J | 0.085 J | 0.14 J | 0.048 J | 0.06 J | 0.33 J | 0.33 J | 0.38 J | 0.35 J | 0.46 U | 1.2 UJ | 0.13 J | 0.36 J | 0.083 J | 0.16 J | 0.58 | 0.78 | 0.13 J | 0.27 J |
| SVOC | ISOPHORONE | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 U | 0.56 U | 2 UJ |
| SVOC | NAPHTHALENE | MG/KG | 0.02 J | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.32 J | 0.052 J | 0.56 U | 2 UJ |
| SVOC | NITROBENZENE | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 U | 0.56 U | 2 UJ |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 U | 0.56 U | 2 UJ |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 U | 0.56 U | 2 UJ |
| SVOC | PENTACHLOROPHENOL | MG/KG | 1.1 U | 1.6 U | 2.1 UJ | 2.1 UJ | 1.8 UJ | 1.2 U | 1.9 UJ | 2.2 UJ | 5.2 UJ | 4.9 UJ | 1.2 U | 3 UJ | 1.6 UJ | 1.4 UJ | 1.2 UJ | 1.2 UJ | 1.2 U | 0.98 U | 1.4 U | 5.2 UJ |
| SVOC | PHENANTHRENE | MG/KG | 0.2 J | 0.14 J | 0.48 J | 0.44 J | 0.19 J | 0.093 J | 0.95 J | 0.89 J | 1 J | 0.75 J | 0.46 U | 1.2 UJ | 0.22 J | 0.95 J | 0.34 J | 0.6 J | 6.5 | 2.7 | 0.4 J | 0.29 J |
| SVOC | PHENOL | MG/KG | 0.42 U | 0.62 U | 0.82 UJ | 0.84 UJ | 0.72 UJ | 0.47 U | 0.77 UJ | 0.89 UJ | 2.1 UJ | 1.9 UJ | 0.46 U | 1.2 UJ | 0.65 UJ | 0.57 UJ | 0.49 UJ | 0.48 UJ | 0.48 U | 0.39 U | 0.56 U | 2 UJ |
| SVOC | PYRENE | MG/KG | 0.46 | 0.23 J | 0.44 J | 0.91 J | 0.31 J | 0.2 J | 2.3 J | 2.1 J | 1.5 J | 1.2 J | 0.021 J | 1.2 UJ | 0.48 J | 1.4 J | 0.47 J | 0.71 J | 9.4 J | 4.5 | 0.69 | 0.69 J |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | 1,1-DICHLOROETHANE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | 1,1-DICHLOROETHENE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | 1,2,3-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | 1,2-DIBROMOETHANE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | 1,2-DICHLOROETHANE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | 1,4-DIOXANE (P-DIOXANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 UJ | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 UJ | 0.045 UJ | 0.017 UJ | 0.018 UJ | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 UJ | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | ACETONE | MG/KG | 0.012 UJ | 0.03 UJ | 0.12 UJ | 0.1 UJ | 0.045 UJ | 0.052 UJ | 0.11 J | 0.25 J | 0.26 J | 0.25 J | 0.01 UJ | 0.053 UJ | 0.019 UJ | 0.018 UJ | 0.013 U | 0.012 U | 0.053 U | 0.048 | 0.044 U | 0.54 J |
| VOC | BENZENE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | BROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | BROMOFORM | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | BROMOMETHANE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | CARBON DISULFIDE | MG/KG | 0.011 U | 0.015 U | 0.006 J | 0.006 J | 0.003 J | 0.004 J | 0.01 J | 0.033 J | 0.032 J | 0.022 J | 0.01 U | 0.008 J | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.001 J | 0.016 U | 0.094 UJ |
| VOC | CARBON TETRACHLORIDE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | CHLOROBENZENE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | CHLOROETHANE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | CHLOROFORM | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | CHLOROMETHANE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | CYCLOHEXANE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | DICHLOROMETHANE | MG/KG | 0.011 U | 0.015 U | 0.005 J | 0.006 J | 0.004 J | 0.013 U | 0.004 J | 0.044 UJ | 0.025 J | 0.022 J | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.002 J | 0.002 J | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | ETHYLBENZENE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.03 | 0.011 J | 0.01 J | 0.001 J | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | ISOPROPYLBENZENE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | METHYL ACETATE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.006 J | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.004 J | 0.018 U | 0.011 U | 0.012 U | 0.011 J | 0.009 U | 0.01 J | 0.094 UJ |
| VOC | METHYL ETHYL KETONE | MG/KG | 0.003 J | 0.006 J | 0.034 J | 0.03 J | 0.011 J | 0.014 J | 0.035 J | 0.09 J | 0.076 J | 0.081 J | 0.01 UJ | 0.011 J | 0.006 J | 0.018 UJ | 0.011 U | 0.012 U | 0.01 J | 0.009 | 0.016 J | 0.12 J |
| VOC | METHYLCYCLOHEXANE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | STYRENE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | TETRACHLOROETHENE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | TOLUENE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.002 J | 0.018 U | 0.011 U | 0.012 U | 0.049 | 0.009 U | 0.002 J | 0.094 UJ |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | VINYL CHLORIDE | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.018 U | 0.011 U | 0.012 U | 0.014 U | 0.009 U | 0.016 U | 0.094 UJ |
| VOC | XYLENE, O- | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES, M & P | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | 0.011 U | 0.015 U | 0.032 UJ | 0.04 UJ | 0.024 UJ | 0.013 U | 0.035 UJ | 0.044 UJ | 0.11 UJ | 0.1 UJ | 0.01 U | 0.045 UJ | 0.017 U | 0.11 | 0.061 | 0.055 | 0.003 J | 0.009 U | 0.016 U | 0.094 UJ |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCDD0031 | HCDD0032 | HCDD0033 | HCDD0033 | HCDD0034 | HCDD0040 | HCDD0041 | HCDD0042 | HCDD0043 | HCDD0052 | HCDD0052 | HCDD0053 | HCDD0054 | HCDD0055 | HCDD0056 | HCDD0057 | HCDD0058 | HCDD0059 | HCDD0060 | HCDD0061 |
| | | Field Sample ID | HCDD0031-SD-AA-AB-0 | HCDD0032-SD-AA-AB-0 | HCDD0033-SD-AA-AB-0 | HCDD0033-SD-AA-AB-1 | HCDD0034-SD-AA-AB-0 | HCDD0040-SD-AA-AB-0 | HCDD0041-SD-AA-AB-0 | HCDD0042-SD-AA-AB-0 | HCDD0043-SD-AA-AB-0 | HCDD0052-SD-AA-AB-0 | HCDD0052-SD-AA-AB-1 | HCDD0053-SD-AA-AB-0 | HCDD0054-SD-AA-AB-0 | HCDD0055-SD-AA-AB-0 | HCDD0056-SD-AA-AB-0 | HCDD0057-SD-AA-AB-0 | HCDD0058-SD-AA-AB-0 | HCDD0059-SD-AA-AB-0 | HCDD0060-SD-AA-AB-0 | HCDD0061-SD-AA-AB-0 |
| | | Sample Date | 6/15/05 | 6/15/05 | 6/16/05 | 6/16/05 | 6/16/05 | 7/7/05 | 7/7/05 | 7/7/05 | 7/7/05 | 8/3/05 | 8/3/05 | 8/3/05 | 8/3/05 | 8/3/05 | 8/3/05 | 8/3/05 | 8/4/05 | 8/4/05 | 8/8/05 | 8/9/05 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 4730 J | 2920 J | 1200 | 571 | 2490 J | 2340 | 4710 J | 6270 J | 3550 J | 7010 J | 6600 J | 5560 J | 4770 J | 8290 J | 11500 J | 15300 J | 13700 J | 11800 J | 11100 J | 18900 J |
| METALS | ANTIMONY | MG/KG | 2.9 UJ | 2.7 UJ | 1.8 U | 1.6 U | 2.6 UJ | 2.3 U | 3.5 UJ | 4.7 UJ | 3.2 UJ | 6.5 J | 5.5 J | 6 J | 6.3 J | 7.1 UJ | 8.9 UJ | 11.4 UJ | 9.2 UJ | 13.8 UJ | 7.4 UJ | 7.3 J |
| METALS | ARSENIC | MG/KG | 53.1 J | 44.5 J | 27.1 J | 9.1 J | 44 J | 50 | 18.8 J | 32.3 J | 127 J | 144 J | 146 J | 120 J | 152 J | 193 J | 171 J | 369 J | 173 J | 101 J | 4460 J | 104 J |
| METALS | BARIUM | MG/KG | 154 J | 76.6 J | 89 | 33.5 J | 121 J | 90.6 | 140 J | 187 J | 153 J | 508 J | 476 J | 361 J | 345 J | 504 J | 696 J | 792 J | 767 J | 398 J | 442 J | 641 J |
| METALS | BERYLLIUM | MG/KG | 0.42 J | 0.27 J | 0.07 U | 0.07 U | 0.1 UJ | 0.15 J | 0.35 J | 0.39 J | 0.18 J | 0.55 J | 0.58 J | 0.44 J | 0.45 J | 0.76 J | 0.85 J | 1.1 J | 0.86 J | 0.55 UJ | 0.93 J | 0.79 J |
| METALS | CADMIUM | MG/KG | 1.1 J | 0.97 J | 0.31 J | 0.09 U | 0.52 J | 0.54 J | 0.73 J | 0.94 J | 1.4 J | 7.5 J | 6.7 J | 5 J | 6.8 J | 10.2 J | 11.3 J | 17.1 J | 13 J | 10.9 J | 8.4 J | 3.6 J |
| METALS | CALCIUM | MG/KG | 5070 J | 4050 J | 574 J | 280 J | 1340 J | 1190 J | 4170 J | 6120 J | 1090 J | 6090 J | 5260 J | 3620 J | 4880 J | 5720 J | 6400 J | 10200 J | 10700 J | 11400 J | 10200 J | 3720 J |
| METALS | CHROMIUM | MG/KG | 40.3 J | 27 J | 41.3 J | 13.5 J | 92.4 J | 28.5 J | 30.8 J | 43.2 J | 57.6 J | 159 J | 151 J | 117 J | 141 J | 202 J | 262 J | 379 J | 245 J | 76.1 J | 873 J | 202 J |
| METALS | COBALT | MG/KG | 1.5 J | 2.5 J | 0.98 J | 0.74 U | 2.2 J | 2.1 J | 1.6 UJ | 2.1 UJ | 1.6 J | 10.9 J | 8.9 J | 7.7 J | 9.7 J | 10.7 J | 8 J | 13.2 J | 10.6 J | 6.7 J | 8.8 J | 3 J |
| METALS | COPPER | MG/KG | 15.2 J | 10.4 J | 11.8 | 4.1 J | 12.1 J | 9.1 | 9.3 J | 14.7 J | 22.5 J | 107 J | 104 J | 82.9 J | 66 J | 126 J | 213 J | 365 J | 252 J | 239 J | 1400 J | 154 J |
| METALS | CYANIDE | MG/KG | 2.3 J | 1.2 UJ | 1.9 J | 0.95 J | 0.99 UJ | 0.76 U | 0.89 UJ | 1.4 UJ | 3.9 J | 3.6 J | 1.6 UJ | 1.9 J | 1.8 J | 2.8 J | 5.2 J | 3.6 UJ | 3 UJ | 4.1 UJ | 59 J | 6.9 J |
| METALS | IRON | MG/KG | 5890 J | 4410 J | 2250 | 1020 | 5120 J | 4580 | 4450 J | 6970 J | 5300 J | 22200 J | 22900 J | 16700 J | 19500 J | 22700 J | 24600 J | 28700 J | 35900 J | 23500 J | 17200 J | 21400 J |
| METALS | LEAD | MG/KG | 343 J | 225 J | 359 J | 118 J | 1160 J | 233 | 328 J | 247 J | 678 J | 1770 J | 1610 J | 1270 J | 2520 J | 2870 J | 2850 J | 5580 J | 3150 J | 772 J | 9340 J | 1820 J |
| METALS | MAGNESIUM | MG/KG | 183 J | 145 J | 71 J | 63.5 J | 136 J | 86.7 J | 160 J | 282 J | 188 J | 3130 UJ | 2990 UJ | 2560 UJ | 2940 UJ | 4760 UJ | 5930 UJ | 7580 UJ | 1200 J | 1290 J | 421 J | 1050 J |
| METALS | MANGANESE | MG/KG | 40.5 J | 32.8 J | 11.2 | 4.9 | 53 J | 40.7 | 52 J | 66.6 J | 29.2 J | 71.4 J | 122 J | 133 J | 143 J | 123 J | 133 J | 139 J | 266 J | 178 J | 80 J | 51.1 J |
| METALS | MERCURY | MG/KG | 0.13 UJ | 0.098 UJ | 0.061 U | 0.061 U | 0.099 UJ | 0.079 U | 0.1 UJ | 0.14 UJ | 0.11 UJ | 0.3 J | 0.38 J | 0.25 J | 0.26 J | 0.42 J | 0.44 J | 0.65 J | 0.55 J | 0.62 J | 0.23 J | 0.56 J |
| METALS | NICKEL | MG/KG | 3.5 J | 3.5 J | 1.2 J | 0.67 J | 2.5 J | 3.3 J | 2.5 J | 3.5 J | 2.7 J | 15.6 J | 14 J | 11.5 J | 12.8 J | 25.7 J | 21.3 J | 32.5 J | 26.1 J | 35.6 J | 45.2 J | 11.9 J |
| METALS | POTASSIUM | MG/KG | 203 UJ | 187 UJ | 228 U | 206 U | 327 UJ | 291 U | 443 UJ | 592 UJ | 396 UJ | 590 UJ | 564 UJ | 483 UJ | 554 UJ | 898 UJ | 1120 UJ | 1430 UJ | 1150 UJ | 1730 UJ | 933 UJ | 449 UJ |
| METALS | SELENIUM | MG/KG | 2.4 UJ | 2.2 UJ | 1.1 UJ | 1 UJ | 1.6 UJ | 1.5 U | 2.2 UJ | 3 UJ | 2 UJ | 2.9 UJ | 3.1 J | 2.4 UJ | 3 J | 4.5 UJ | 5.6 UJ | 7.1 UJ | 8.2 J | 8.6 UJ | 4.7 UJ | 3.2 J |
| METALS | SILVER | MG/KG | 0.86 UJ | 0.79 UJ | 0.51 U | 0.46 U | 0.73 UJ | 0.53 U | 0.8 UJ | 1.1 UJ | 0.71 UJ | 1.3 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 2 UJ | 2.5 UJ | 3.2 UJ | 2.6 UJ | 3.9 UJ | 2.1 UJ | 1 J |
| METALS | SODIUM | MG/KG | 480 J | 314 UJ | 155 U | 140 U | 222 UJ | 198 U | 301 UJ | 403 UJ | 269 UJ | 509 J | 383 UJ | 337 J | 424 J | 610 UJ | 759 UJ | 970 UJ | 785 UJ | 1170 UJ | 634 UJ | 305 UJ |
| METALS | THALLIUM | MG/KG | 4.3 UJ | 4 UJ | 2.1 U | 1.9 U | 3 UJ | 2.6 U | 4 UJ | 5.3 UJ | 3.6 UJ | 3.8 UJ | 3.6 UJ | 3.1 UJ | 3.5 UJ | 5.7 UJ | 7.1 UJ | 9.1 UJ | 10.4 UJ | 15.6 UJ | 8.4 UJ | 4 UJ |
| METALS | VANADIUM | MG/KG | 9.1 J | 6.5 J | 3.6 J | 1.6 J | 5.8 J | 5.3 J | 7.8 J | 13 J | 8.8 J | 17.2 J | 16.6 J | 13.4 J | 13.5 J | 19.5 J | 25.3 J | 38.2 J | 24.4 J | 37.9 J | 23.1 J | 81.2 J |
| METALS | ZINC | MG/KG | 65.8 J | 64 J | 49.7 | 18.4 | 88.4 J | 69.9 | 31.4 J | 62.2 J | 95.6 J | 995 J | 795 J | 595 J | 797 J | 1040 J | 1200 J | 1550 J | 1820 J | 2770 J | R | 344 J |
| PEST/PCB | 4,4'-DDD | MG/KG | 0.0092 UJ | 0.008 UJ | 0.02 J | 0.0096 J | 0.0072 UJ | 0.0055 UJ | 0.0078 UJ | 0.011 UJ | 0.007 UJ | 0.014 J | 0.013 J | 0.012 J | 0.0096 J | 0.015 J | 0.017 J | 0.02 J | 0.017 J | 0.051 J | 0.061 J | 0.079 J |
| PEST/PCB | 4,4'-DDE | MG/KG | 0.0092 UJ | 0.008 UJ | 0.0046 J | 0.0042 UJ | 0.0072 UJ | 0.0055 UJ | 0.0078 UJ | 0.011 UJ | 0.007 UJ | 0.014 J | 0.015 J | 0.014 J | 0.011 UJ | 0.016 UJ | 0.019 UJ | 0.025 UJ | 0.024 J | 0.031 J | 0.013 J | 0.045 J |
| PEST/PCB | 4,4'-DDT | MG/KG | 0.0092 UJ | 0.008 UJ | 0.0044 UJ | 0.0042 UJ | 0.0072 UJ | 0.0055 UJ | 0.0078 UJ | 0.011 UJ | 0.007 UJ | 0.011 UJ | 0.011 UJ | 0.0059 UJ | 0.011 UJ | 0.016 UJ | 0.019 UJ | 0.025 UJ | 0.021 UJ | 0.03 UJ | 0.017 UJ | 0.01 J |
| PEST/PCB | ALDRIN | MG/KG | 0.0047 UJ | 0.0041 UJ | 0.0023 UJ | 0.0022 UJ | 0.0037 UJ | 0.0028 UJ | 0.004 UJ | 0.0055 UJ | 0.0036 UJ | 0.0057 UJ | 0.0057 UJ | 0.0049 UJ | 0.0055 UJ | 0.0081 UJ | 0.01 UJ | 0.013 UJ | 0.011 UJ | 0.015 UJ | 0.0085 UJ | 0.0042 UJ |
| PEST/PCB | ALPHA-BHC | MG/KG | 0.0047 UJ | 0.0041 UJ | 0.0023 UJ | 0.0022 UJ | 0.0037 UJ | 0.0028 UJ | 0.004 UJ | 0.0055 UJ | 0.0036 UJ | 0.0057 UJ | 0.0057 UJ | 0.0049 UJ | 0.0055 UJ | 0.0081 UJ | 0.01 UJ | 0.013 UJ | 0.011 UJ | 0.015 UJ | 0.0085 UJ | 0.0042 UJ |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | 0.0047 UJ | 0.0041 UJ | 0.0012 J | 0.0022 UJ | 0.0037 UJ | 0.0028 UJ | 0.004 UJ | 0.0055 UJ | 0.0036 UJ | 0.01 J | 0.011 J | 0.0086 J | 0.0071 J | 0.012 J | 0.015 J | 0.015 J | 0.015 J | 0.015 UJ | 0.0085 UJ | 0.026 J |
| PEST/PCB | AROCLOR-1016 | MG/KG | 0.092 UJ | 0.08 UJ | 0.044 UJ | 0.042 UJ | 0.072 UJ | 0.055 UJ | 0.078 UJ | 0.11 UJ | 0.07 UJ | 0.11 UJ | 0.11 UJ | 0.094 UJ | 0.11 UJ | 0.16 UJ | 0.19 UJ | 0.25 UJ | 0.21 UJ | 0.3 UJ | 0.17 UJ | 0.082 UJ |
| PEST/PCB | AROCLOR-1221 | MG/KG | 0.19 UJ | 0.16 UJ | 0.089 UJ | 0.086 UJ | 0.15 UJ | 0.11 UJ | 0.16 UJ | 0.22 UJ | 0.14 UJ | 0.22 UJ | 0.22 UJ | 0.19 UJ | 0.22 UJ | 0.32 UJ | 0.39 UJ | 0.51 UJ | 0.42 UJ | 0.61 UJ | 0.34 UJ | 0.17 UJ |
| PEST/PCB | AROCLOR-1232 | MG/KG | 0.092 UJ | 0.08 UJ | 0.044 UJ | 0.042 UJ | 0.072 UJ | 0.055 UJ | 0.078 UJ | 0.11 UJ | 0.07 UJ | 0.11 UJ | 0.11 UJ | 0.094 UJ | 0.11 UJ | 0.16 UJ | 0.19 UJ | 0.25 UJ | 0.21 UJ | 0.3 UJ | 0.17 UJ | 0.082 UJ |
| PEST/PCB | AROCLOR-1242 | MG/KG | 0.092 UJ | 0.08 UJ | 0.044 UJ | 0.042 UJ | 0.072 UJ | 0.055 UJ | 0.078 UJ | 0.11 UJ | 0.07 UJ | 0.11 UJ | 0.11 UJ | 0.094 UJ | 0.11 UJ | 0.16 UJ | 0.19 UJ | 0.25 UJ | 0.21 UJ | 0.3 UJ | 0.17 UJ | 0.082 UJ |
| PEST/PCB | AROCLOR-1248 | MG/KG | 0.092 UJ | 0.08 UJ | 0.044 UJ | 0.042 UJ | 0.072 UJ | 0.055 UJ | 0.078 UJ | 0.11 UJ | 0.07 UJ | 0.11 UJ | 0.11 UJ | 0.094 UJ | 0.11 UJ | 0.16 UJ | 0.19 UJ | 0.25 UJ | 0.21 UJ | 0.3 UJ | 0.17 UJ | 0.082 UJ |
| PEST/PCB | AROCLOR-1254 | MG/KG | 0.092 UJ | 0.08 UJ | 0.044 UJ | 0.042 UJ | 0.072 UJ | 0.055 UJ | 0.078 UJ | 0.11 UJ | 0.07 UJ | 0.12 J | 0.11 UJ | 0.13 J | 0.11 UJ | 0.14 J | 0.21 J | 0.21 J | 0.27 J | 0.23 J | 0.17 UJ | 0.25 J |
| PEST/PCB | AROCLOR-1260 | MG/KG | 0.092 UJ | 0.08 UJ | 0.044 UJ | 0.042 UJ | 0.072 UJ | 0.055 UJ | 0.078 UJ | 0.11 UJ | 0.07 UJ | 0.081 J | 0.086 J | 0.067 J | 0.056 J | 0.084 J | 0.13 J | 0.25 UJ | 0.11 J | 0.3 UJ | 0.17 UJ | 0.1 J |
| PEST/PCB | AROCLOR-1262 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1268 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | BETA-BHC | MG/KG | 0.0047 UJ | 0.0041 UJ | 0.0023 UJ | 0.0022 UJ | 0.0037 UJ | 0.0028 UJ | 0.004 UJ | 0.0055 UJ | 0.0018 J | 0.0057 UJ | 0.0057 UJ | 0.0049 UJ | 0.0055 UJ | 0.0081 UJ | 0.01 UJ | 0.013 UJ | 0.011 UJ | 0.015 UJ | 0.0061 J | 0.011 J |
| PEST/PCB | DELTA-BHC | MG/KG | 0.0047 UJ | 0.0041 UJ | 0.0023 UJ | 0.0022 UJ | 0.0037 UJ | 0.0028 UJ | 0.004 UJ | 0.0055 UJ | 0.0036 UJ | 0.0057 UJ | 0.0057 UJ | 0.0049 UJ | 0.0055 UJ | 0.0081 UJ | 0.01 UJ | 0.013 UJ | 0.011 UJ | 0.015 UJ | 0.0085 UJ | 0.0042 UJ |
| PEST/PCB | DIELDRIN | MG/KG | 0.0092 UJ | 0.008 UJ | 0.0044 UJ | 0.0042 UJ | 0.0072 UJ | 0.0055 UJ | 0.0078 UJ | 0.011 UJ | 0.007 UJ | 0.011 UJ | 0.011 UJ | 0.0094 UJ | 0.011 UJ | 0.016 UJ | 0.019 UJ | 0.025 UJ | 0.021 UJ | 0.03 UJ | 0.017 UJ | 0.0088 J |
| PEST/PCB | ENDOSULFAN I | MG/KG | 0.0047 UJ | 0.0041 UJ | 0.0023 UJ | 0.0022 UJ | 0.0037 UJ | 0.0028 UJ | 0.004 UJ | 0.0055 UJ | 0.0036 UJ | 0.0057 UJ | 0.0057 UJ | 0.0049 UJ | 0.0055 UJ | 0.0081 UJ | 0.01 UJ | 0.013 UJ | 0.011 UJ | 0.015 UJ | 0.0085 UJ | 0.0042 UJ |
| PEST/PCB | ENDOSULFAN II | MG/KG | 0.0092 UJ | 0.008 UJ | 0.0044 UJ | 0.0042 UJ | 0.0072 UJ | 0.0055 UJ | 0.0078 UJ | 0.011 UJ | 0.007 UJ | 0.011 UJ | 0.011 UJ | 0.0094 UJ | 0.011 UJ | 0.016 UJ | 0.019 UJ | 0.025 UJ | 0.021 UJ | 0.03 UJ | 0.017 UJ | 0.0082 UJ |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | 0.0092 UJ | 0.008 UJ | 0.0044 UJ | 0.0042 UJ | 0.0072 UJ | 0.0055 UJ | 0.0078 UJ | 0.011 UJ | 0.007 UJ | 0.011 UJ | 0.011 UJ | 0.0094 UJ | 0.011 UJ | 0.016 UJ | 0.019 UJ | 0.025 UJ | 0.021 UJ | 0.03 UJ | 0.017 UJ | 0.0082 UJ |
| PEST/PCB | ENDRIN | MG/KG | 0.0092 UJ | 0.008 UJ | 0.0044 UJ | 0.0042 UJ | 0.0072 UJ | 0.0055 UJ | 0.0078 UJ | 0.011 UJ | 0.007 UJ | 0.011 UJ | 0.011 UJ | 0.0094 UJ | 0.011 UJ | 0.016 UJ | 0.019 UJ | 0.025 UJ | 0.021 UJ | 0.03 UJ | 0.017 UJ | 0.0082 UJ |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | 0.0092 UJ | 0.008 UJ | 0.0044 UJ | 0.0042 UJ | 0.0072 UJ | 0.0055 UJ | 0.0078 UJ | 0.011 UJ | 0.007 UJ | 0.011 UJ | 0.011 UJ | 0.0094 UJ | 0.011 UJ | 0.016 UJ | 0.019 UJ | 0.025 UJ | 0.021 UJ | 0.03 UJ | 0.017 UJ | 0.0082 UJ |
| PEST/PCB | ENDRIN KETONE | MG/KG | 0.0092 UJ | 0.008 UJ | 0.0044 UJ | 0.0042 UJ | 0.0072 UJ | 0.0055 UJ | 0.0078 UJ | 0.011 UJ | 0.007 UJ | 0.011 UJ | 0.011 UJ | 0.0094 UJ | 0.011 UJ | 0.016 UJ | 0.019 UJ | 0.025 UJ | 0.021 UJ | 0.03 UJ | 0.017 UJ | 0.0082 UJ |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | 0.0047 UJ | 0.0041 UJ | 0.0023 UJ | 0.0022 UJ | 0.0037 UJ | 0.0028 UJ | 0.004 UJ | 0.0055 UJ | 0.0036 UJ | 0.0057 UJ | 0.0057 UJ | 0.0049 UJ | 0.0055 UJ | 0.0081 UJ | 0.01 UJ | 0.013 UJ | 0.011 UJ | 0.015 UJ | 0.0085 UJ | 0.0042 UJ |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | 0.0047 UJ | 0.0041 UJ | 0.0023 UJ | 0.0022 UJ | 0.0037 UJ | 0.0028 UJ | 0.004 UJ | 0.0055 UJ | 0.0036 UJ | 0.0073 J | 0.0082 J | 0.0058 J | 0.0052 J | 0.0082 J | 0.011 J | 0.012 J | 0.01 J | 0.014 J | 0.0085 UJ | 0.02 J |
| PEST/PCB | HEPTACHLOR | MG/KG | 0.0047 UJ | 0.0041 UJ | 0.0023 UJ | 0.0022 UJ | 0.0037 UJ | 0.0028 UJ | 0.004 UJ | 0.0055 UJ | 0.0036 UJ | 0.0057 UJ | 0.0057 UJ | 0.0049 UJ | 0.0055 UJ | 0.0081 UJ | 0.01 UJ | 0.013 UJ | 0.011 UJ | 0.015 UJ | 0.0085 UJ | 0.0042 UJ |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | 0.0047 UJ | 0.0041 UJ | 0.0023 UJ | 0.0022 UJ | 0.0037 UJ | 0.0028 UJ | 0.004 UJ | 0.0055 UJ | 0.0036 UJ | 0.0057 UJ | 0.0057 UJ | 0.0049 UJ | 0.0055 UJ | 0.0081 UJ | 0.01 UJ | 0.013 UJ | 0.011 UJ | 0.015 UJ | 0.0085 UJ | 0.0044 J |
| PEST/PCB | METHOXYCHLOR | MG/KG | 0.047 UJ | 0.041 UJ | 0.023 UJ | 0.022 UJ | 0.037 UJ | 0.028 UJ | 0.04 UJ | 0.055 UJ | 0.036 UJ | 0.057 UJ | 0.057 UJ | 0.049 UJ | 0.055 UJ | 0.081 UJ | 0.1 UJ | 0.13 UJ | 0.11 UJ | 0.15 UJ | 0.085 UJ | 0.042 UJ |
| PEST/PCB | TOXAPHENE | MG/KG | 0.47 UJ | 0.41 UJ | 0.23 UJ | 0.22 UJ | 0.37 UJ | 0.28 UJ | 0.4 UJ | 0.55 UJ | 0.36 UJ | 0.57 UJ | 0.57 UJ | 0.49 UJ | 0.55 UJ | 0.81 UJ | 1 UJ | 1.3 UJ | 1.1 UJ | 1.5 UJ | 0.85 UJ | 0.42 UJ |
| SVOC | 1,1'-BIPHENYL | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | 1,2,4,5-TETRACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | 2,3,4,6-TETRACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | 2.3 UJ | 2 UJ | 1.1 UJ | 1.1 UJ | 1.8 UJ | 1.4 UJ | 2 UJ | 2.7 UJ | 1.8 UJ | 2.8 UJ | 2.8 UJ | 2.4 UJ | 2.7 UJ | 4 UJ | 4.9 UJ | 6.4 UJ | 5.2 UJ | 7.5 UJ | 4.1 UJ | 2.1 UJ |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | 2,4-DINITROPHENOL | MG/KG | 2.3 UJ | 2 UJ | 1.1 UJ | 1.1 UJ | 1.8 UJ | 1.4 UJ | 2 UJ | 2.7 UJ | 1.8 UJ | 2.8 UJ | 2.8 UJ | 2.4 UJ | 2.7 UJ | 4 UJ | 4.9 UJ | 6.4 UJ | 5.2 UJ | 7.5 UJ | 4.1 UJ | 2.1 UJ |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | 2-CHLOROPHENOL | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | 2-METHYLPHENOL | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | 2-NITROANILINE | MG/KG | 2.3 UJ | 2 UJ | 1.1 UJ | 1.1 UJ | 1.8 UJ | 1.4 UJ | 2 UJ | 2.7 UJ | 1.8 UJ | 2.8 UJ | 2.8 UJ | 2.4 UJ | 2.7 UJ | 4 UJ | 4.9 UJ | 6.4 UJ | 5.2 UJ | 7.5 UJ | 4.1 UJ | 2.1 UJ |
| SVOC | 2-NITROPHENOL | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | 3-NITROANILINE | MG/KG | 2.3 UJ | 2 UJ | 1.1 UJ | 1.1 UJ | 1.8 UJ | 1.4 UJ | 2 UJ | 2.7 UJ | 1.8 UJ | 2.8 UJ | 2.8 UJ | 2.4 UJ | 2.7 UJ | 4 UJ | 4.9 UJ | 6.4 UJ | 5.2 UJ | 7.5 UJ | 4.1 UJ | 2.1 UJ |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | 2.3 UJ | 2 UJ | 1.1 UJ | 1.1 UJ | 1.8 UJ | 1.4 UJ | 2 UJ | 2.7 UJ | 1.8 UJ | 2.8 UJ | 2.8 UJ | 2.4 UJ | 2.7 UJ | 4 UJ | 4.9 UJ | 6.4 UJ | 5.2 UJ | 7.5 UJ | 4.1 UJ | 2.1 UJ |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | 4-CHLOROANILINE | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.33 J |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | 4-METHYLPHENOL | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | 4-NITROANILINE | MG/KG | 2.3 UJ | 2 UJ | 1.1 UJ | 1.1 UJ | 1.8 UJ | 1.4 UJ | 2 UJ | 2.7 UJ | 1.8 UJ | 2.8 UJ | 2.8 UJ | 2.4 UJ | 2.7 UJ | 4 UJ | 4.9 UJ | 6.4 UJ | 5.2 UJ | 7.5 UJ | 4.1 UJ | 2.1 UJ |
| SVOC | 4-NITROPHENOL | MG/KG | 2.3 UJ | 2 UJ | 1.1 UJ | 1.1 UJ | 1.8 UJ | 1.4 UJ | 2 UJ | 2.7 UJ | 1.8 UJ | 2.8 UJ | 2.8 UJ | 2.4 UJ | 2.7 UJ | 4 UJ | 4.9 UJ | 6.4 UJ | 5.2 UJ | 7.5 UJ | 4.1 UJ | 2.1 UJ |
| SVOC | ACENAPHTHENE | MG/KG | 0.92 UJ | 0.8 UJ | 0.056 J | 0.026 J | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 0.066 J | 0.064 J | 0.94 UJ | 0.11 J | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.054 J |
| SVOC | ACENAPHTHYLENE | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | ACETOPHENONE | MG/KG | 0.92 UJ | 0.8 UJ | 0.024 J | 0.022 J | 0.037 J | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | ANTHRACENE | MG/KG | 0.92 UJ | 0.8 UJ | 0.051 J | 0.031 J | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 0.12 J | 0.13 J | 0.1 J | 0.23 J | 0.093 J | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.083 J |
| SVOC | ATRAZINE | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | BENZALDEHYDE | MG/KG | 0.26 J | 0.51 J | 0.28 J | 0.18 J | 0.4 J | 0.14 J | 0.18 J | 0.33 J | 0.16 J | 0.49 J | 0.27 J | 0.94 UJ | 1.1 UJ | 0.43 J | 0.42 J | 0.91 J | 0.45 J | 3 UJ | 0.62 J | 0.82 UJ |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.92 UJ | 0.8 UJ | 0.22 J | 0.13 J | 0.038 J | 0.027 J | 0.081 J | 0.14 J | 0.061 J | 0.9 J | 0.87 J | 0.62 J | 0.87 J | 0.56 J | 0.52 J | 0.6 J | 0.54 J | 0.3 J | 0.29 J | 0.61 J |
| SVOC | BENZO(A)PYRENE | MG/KG | 0.92 UJ | 0.038 J | 0.2 J | 0.11 J | 0.039 J | 0.028 J | 0.077 J | 0.12 J | 0.057 J | 1.1 J | 0.86 J | 0.67 J | 0.88 J | 0.57 J | 0.48 J | 0.65 J | 0.51 J | 0.22 J | 0.31 J | 0.72 J |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 0.048 J | 0.047 J | 0.24 J | 0.14 J | 0.045 J | 0.057 J | 0.12 J | 0.14 J | 0.082 J | 1.2 J | 1.4 J | 0.96 J | 1.1 J | 0.8 J | 0.52 J | 0.99 J | 0.72 J | 0.32 J | 0.44 J | 0.93 J |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.92 UJ | 0.8 UJ | 0.1 J | 0.074 J | 0.72 UJ | 0.55 UJ | 0.78 UJ | 0.076 J | 0.054 J | 0.62 J | 0.6 J | 0.42 J | 0.45 J | 0.36 J | 0.36 J | 0.59 J | 0.63 J | 0.29 J | 0.28 J | 0.46 J |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.048 J | 0.057 J | 0.21 J | 0.11 J | 0.055 J | 0.027 J | 0.059 J | 0.13 J | 0.07 J | 1.6 J | 0.84 J | 0.59 J | 0.8 J | 0.63 J | 0.79 J | 0.59 J | 0.59 J | 0.2 J | 0.32 J | 1 J |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 0.075 J | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 0.11 J | 3 UJ | 1.6 UJ | 0.074 J |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
| | | Location ID | HCDD0031 | HCDD0032 | HCDD0033 | HCDD0033 | HCDD0034 | HCDD0040 | HCDD0041 | HCDD0042 | HCDD0043 | HCDD0052 | HCDD0052 | HCDD0053 | HCDD0054 | HCDD0055 | HCDD0056 | HCDD0057 | HCDD0058 | HCDD0059 | HCDD0060 | HCDD0061 |
| | | Field Sample ID | HCDD0031-SD-AA-AB-0 | HCDD0032-SD-AA-AB-0 | HCDD0033-SD-AA-AB-0 | HCDD0033-SD-AA-AB-1 | HCDD0034-SD-AA-AB-0 | HCDD0040-SD-AA-AB-0 | HCDD0041-SD-AA-AB-0 | HCDD0042-SD-AA-AB-0 | HCDD0043-SD-AA-AB-0 | HCDD0052-SD-AA-AB-0 | HCDD0052-SD-AA-AB-1 | HCDD0053-SD-AA-AB-0 | HCDD0054-SD-AA-AB-0 | HCDD0055-SD-AA-AB-0 | HCDD0056-SD-AA-AB-0 | HCDD0057-SD-AA-AB-0 | HCDD0058-SD-AA-AB-0 | HCDD0059-SD-AA-AB-0 | HCDD0060-SD-AA-AB-0 | HCDD0061-SD-AA-AB-0 |
| | | Sample Date | 6/15/05 | 6/15/05 | 6/16/05 | 6/16/05 | 6/16/05 | 7/7/05 | 7/7/05 | 7/7/05 | 7/7/05 | 8/3/05 | 8/3/05 | 8/3/05 | 8/3/05 | 8/3/05 | 8/3/05 | 8/3/05 | 8/4/05 | 8/4/05 | 8/8/05 | 8/9/05 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | 0.072 J | 0.23 J | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 0.094 J | 0.053 J | 0.89 J | 0.67 J | 0.46 J | 0.57 J | 0.79 J | 0.51 J | 0.96 J | 1.7 J | 3 UJ | 1.6 UJ | 1.3 J |
| SVOC | CAPROLACTAM | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | CARBAZOLE | MG/KG | 0.92 UJ | 0.8 UJ | 0.033 J | 0.021 J | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 0.082 J | 0.1 J | 0.076 J | 0.12 J | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.083 J |
| SVOC | CHRYSENE | MG/KG | 0.05 J | 0.055 J | 0.28 J | 0.16 J | 0.058 J | 0.043 J | 0.11 J | 0.2 J | 0.11 J | 1.4 J | 1.3 J | 0.89 J | 1.1 J | 0.82 J | 0.76 J | 0.94 J | 0.87 J | 0.39 J | 0.48 J | 0.97 J |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.92 UJ | 0.8 UJ | 0.08 J | 0.042 J | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 0.18 J | 0.14 J | 0.14 J | 0.17 J | 0.093 J | 0.16 J | 0.26 J | 2.1 UJ | 3 UJ | 1.6 UJ | 0.07 J |
| SVOC | DIBENZOFURAN | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 0.063 J | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | DIETHYLPHTHALATE | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | DIMETHYLPHTHALATE | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.026 J | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 0.052 J | 0.052 J | 0.94 UJ | 1.1 UJ | 0.08 J | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 0.081 J | 0.061 J |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | FLUORANTHENE | MG/KG | 0.076 J | 0.078 J | 0.66 J | 0.4 J | 0.092 J | 0.062 J | 0.16 J | 0.22 J | 0.11 J | 1.7 J | 2.1 J | 1.6 J | 1.9 J | 1.3 J | 1.1 J | 1.6 J | 1.2 J | 0.53 J | 0.51 J | 1.8 J |
| SVOC | FLUORENE | MG/KG | 0.92 UJ | 0.8 UJ | 0.056 J | 0.021 J | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 0.066 J | 0.078 J | 0.06 J | 0.15 J | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.062 J |
| SVOC | HEXACHLOROBENZENE | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | HEXACHLOROETHANE | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.92 UJ | 0.8 UJ | 0.13 J | 0.075 J | 0.72 UJ | 0.55 UJ | 0.78 UJ | 0.065 J | 0.047 J | 0.56 J | 0.47 J | 0.35 J | 0.33 J | 0.33 J | 0.31 J | 0.52 J | 0.42 J | 0.18 J | 0.23 J | 0.39 J |
| SVOC | ISOPHORONE | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | NAPHTHALENE | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | NITROBENZENE | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | PENTACHLOROPHENOL | MG/KG | 2.3 UJ | 2 UJ | 1.1 UJ | 1.1 UJ | 1.8 UJ | 1.4 UJ | 2 UJ | 2.7 UJ | 1.8 UJ | 2.8 UJ | 2.8 UJ | 2.4 UJ | 2.7 UJ | 4 UJ | 4.9 UJ | 6.4 UJ | 5.2 UJ | 7.5 UJ | 4.1 UJ | 2.1 UJ |
| SVOC | PHENANTHRENE | MG/KG | 0.92 UJ | 0.047 J | 0.4 J | 0.2 J | 0.037 J | 0.026 J | 0.064 J | 0.13 J | 0.065 J | 0.78 J | 0.84 J | 0.56 J | 1.2 J | 0.56 J | 0.54 J | 0.62 J | 0.48 J | 0.19 J | 0.42 J | 0.65 J |
| SVOC | PHENOL | MG/KG | 0.92 UJ | 0.8 UJ | 0.44 UJ | 0.42 UJ | 0.72 UJ | 0.55 UJ | 0.78 UJ | 1.1 UJ | 0.7 UJ | 1.1 UJ | 1.1 UJ | 0.94 UJ | 1.1 UJ | 1.6 UJ | 1.9 UJ | 2.5 UJ | 2.1 UJ | 3 UJ | 1.6 UJ | 0.82 UJ |
| SVOC | PYRENE | MG/KG | 0.077 J | 0.1 J | 0.6 J | 0.33 J | 0.12 J | 0.072 J | 0.2 J | 0.26 J | 0.12 J | 2 J | 2.1 J | 1.4 J | 1.9 J | 1.4 J | 1.3 J | 1.4 J | 1.2 J | 0.48 J | 0.93 J | 1.2 J |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | 1,1-DICHLOROETHANE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | 1,1-DICHLOROETHENE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | 1,2,3-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | 1,2-DIBROMOETHANE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | 1,2-DICHLOROETHANE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | 1,4-DIOXANE (P-DIOXANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | ACETONE | MG/KG | 0.21 J | 0.16 UJ | 0.03 UJ | 0.036 UJ | 0.27 J | 0.051 U | 0.14 J | 0.27 J | 0.12 J | 0.04 J | 0.059 J | 0.033 J | 0.042 J | 0.072 J | 0.12 J | 0.26 J | 0.1 J | 0.086 J | 0.23 J | 0.057 J |
| VOC | BENZENE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | BROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | BROMOFORM | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | BROMOMETHANE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | CARBON DISULFIDE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.005 J | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | CARBON TETRACHLORIDE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | CHLOROBENZENE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | CHLOROETHANE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | CHLOROFORM | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | CHLOROMETHANE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.007 J | 0.034 UJ | 0.04 UJ | 0.007 J | 0.01 J | 0.12 UJ | 0.14 UJ | 0.017 J | 0.067 UJ | 0.037 UJ |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | CYCLOHEXANE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | DICHLOROMETHANE | MG/KG | 0.036 UJ | 0.061 UJ | 0.001 J | 0.003 J | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.004 J | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.012 J | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | ETHYLBENZENE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | ISOPROPYLBENZENE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | METHYL ACETATE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.001 J | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.018 J | 0.034 UJ | 0.011 J | 0.018 J | 0.033 J | 0.029 J | 0.14 UJ | 0.021 J | 0.067 UJ | 0.037 UJ |
| VOC | METHYL ETHYL KETONE | MG/KG | 0.045 J | 0.031 J | 0.006 J | 0.007 J | 0.059 J | 0.012 J | 0.04 J | 0.061 J | 0.041 J | 0.017 J | 0.025 J | 0.014 J | 0.017 J | 0.028 J | 0.085 UJ | 0.11 J | 0.04 J | 0.13 UJ | 0.099 J | 0.022 J |
| VOC | METHYLCYCLOHEXANE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | STYRENE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | TETRACHLOROETHENE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | TOLUENE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.002 J | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.041 UJ | 0.14 UJ | 0.02 J | 0.083 UJ | 0.005 J |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | VINYL CHLORIDE | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |
| VOC | XYLENE, O- | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES, M & P | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | 0.036 UJ | 0.061 UJ | 0.011 U | 0.011 U | 0.023 UJ | 0.017 U | 0.034 UJ | 0.051 UJ | 0.022 UJ | 0.045 UJ | 0.044 UJ | 0.034 UJ | 0.04 UJ | 0.063 UJ | 0.085 UJ | 0.12 UJ | 0.14 UJ | 0.13 UJ | 0.067 UJ | 0.037 UJ |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCDD0062 | HCDD0063 | HCDD0063 | HCDD0064 | HCDD0065 | HCDD0066 | HCDD0067 | HCDD0068 | HCDD0069 | HCDD0070 | HCDD0070 | HCDD0071 | HCDD0072 | HCDD0074 | HCDD0075 | HCDD0076 | HCDD0077 | HCDD0078 | HCDD0078 | HCDD0079 |
| | | Field Sample ID | HCDD0062-SD-AA-AB-0 | HCDD0063-SD-AA-AB-0 | HCDD0063-SD-AA-AB-1 | HCDD0064-SD-AA-AB-0 | HCDD0065-SD-AA-AB-0 | HCDD0066-SD-AA-AB-0 | HCDD0067-SD-AA-AB-0 | HCDD0068-SD-AA-AB-0 | HCDD0069-SD-AA-AB-0 | HCDD0070-SD-AA-AB-0 | HCDD0070-SD-AA-AB-1 | HCDD0071-SD-AA-AB-0 | HCDD0072-SD-AA-AB-0 | HCDD0074-SD-AA-AB-0 | HCDD0075-SD-AA-AB-0 | HCDD0076-SD-AA-AB-0 | HCDD0077-SD-AA-AB-0 | HCDD0078-SD-AA-AB-0 | HCDD0078-SD-AA-AB-1 | HCDD0079-SD-AA-AB-0 |
| | | Sample Date | 8/9/05 | 8/9/05 | 8/9/05 | 8/9/05 | 8/10/05 | 8/10/05 | 8/10/05 | 8/10/05 | 8/10/05 | 8/11/05 | 8/11/05 | 8/11/05 | 8/11/05 | 9/21/05 | 9/21/05 | 9/21/05 | 6/28/06 | 6/29/06 | 6/29/06 | 7/6/06 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 16300 J | 24300 J | 22400 J | 30900 J | 11000 J | 9820 J | 9650 J | 11700 J | 19000 J | 4630 | 13200 J | 8820 J | 13700 J | 2680 | 1460 | 6690 | 6370 J | 1400 | 1750 | 5000 J |
| METALS | ANTIMONY | MG/KG | 4.6 UJ | 4.1 UJ | 4.7 UJ | 3.7 UJ | 4.2 J | 4 J | 5.7 UJ | 11.6 J | 6.6 UJ | 1.9 U | 5.5 UJ | 3.8 UJ | 5.4 UJ | 4 U | 2.5 U | 4.3 U | 16.6 J | 1.7 UJ | 1.8 UJ | 2.1 J |
| METALS | ARSENIC | MG/KG | 40.9 J | 115 J | 90.8 J | 71.1 J | 39.9 J | 43.5 J | 59.2 J | 65 J | 27.9 J | 4.2 | 9.7 J | 8.2 J | 12.4 J | 12.4 J | 6.7 J | 16 J | 748 J | 49.6 | 57.3 | 122 J |
| METALS | BARIUM | MG/KG | 470 J | 532 J | 534 J | 345 J | 250 J | 247 J | 206 J | 306 J | 332 J | 98.9 | 372 J | 185 J | 297 J | 56 J | 29.8 J | 94.6 | 4870 J | 502 | 691 | 349 J |
| METALS | BERYLLIUM | MG/KG | 1.1 J | 0.94 J | 0.94 J | 0.73 J | 0.54 J | 0.84 J | 1.2 J | 2 J | 0.97 J | 0.22 J | 0.88 J | 0.51 J | 1 J | 0.14 J | 0.05 J | 0.22 J | 0.43 J | 0.1 J | 0.15 J | 0.35 J |
| METALS | CADMIUM | MG/KG | 3.2 J | 3.1 J | 2.9 J | 2.7 J | 1.7 J | 1.5 J | 3.7 J | 3.8 J | 4.5 J | 2 | 5.3 J | 2.6 J | 3.6 J | 0.47 J | 0.14 J | 1 J | 4.8 J | 0.85 J | 0.88 J | 5.3 J |
| METALS | CALCIUM | MG/KG | 5320 J | 6500 J | 5200 J | 5860 J | 3550 J | 3880 J | 6590 J | 10000 J | 6470 J | 1800 | 8030 J | 3100 J | 6890 J | 6710 J | 1610 J | 4010 J | 6290 J | 988 J | 1520 J | 7540 J |
| METALS | CHROMIUM | MG/KG | 183 J | 123 J | 122 J | 59.3 J | 60.2 J | 44.9 J | 48.3 J | 61.6 J | 31.9 J | 6.8 | 23.1 J | 18.5 J | 27.3 J | 12.5 J | 12 J | 40.1 J | 1870 J | 166 J | 200 J | 362 J |
| METALS | COBALT | MG/KG | 3.1 J | 3.8 J | 2.7 J | 3.4 J | 1.4 J | 2 J | 2.7 J | 8.1 J | 7.6 J | 1.9 J | 4.9 J | 4.8 J | 7.1 J | 2.1 J | 0.81 U | 7.9 J | 3 J | 2.5 J | 2.6 J | 3.5 J |
| METALS | COPPER | MG/KG | 120 J | 186 J | 195 J | 208 J | 90.8 J | 113 J | 42.8 J | 64.7 J | 136 J | 49 J | 147 J | 72 J | 86 J | 20.8 J | 9.7 J | 44.5 J | 168 J | 20.7 J | 26 J | 95.3 J |
| METALS | CYANIDE | MG/KG | 3.1 J | 1.4 UJ | 1.4 UJ | 1.3 UJ | 1.1 UJ | 0.68 UJ | 1.4 UJ | 3.1 UJ | 2.1 UJ | 0.85 UJ | 2 UJ | 1.1 UJ | 2.1 UJ | 0.79 UJ | 0.71 J | 0.85 UJ | 360 J | 18.9 | 34.8 | 13.6 J |
| METALS | IRON | MG/KG | 19900 J | 29600 J | 22800 J | 19300 J | 11300 J | 13500 J | 14200 J | 25800 J | 29100 J | 7280 | 20600 J | 16900 J | 22100 J | 7860 | 3340 | 17600 | 27800 J | 3920 | 4930 | 13200 J |
| METALS | LEAD | MG/KG | 2810 J | 1390 J | 1330 J | 700 J | 848 J | 427 J | 660 J | 337 J | 158 J | 34 | 105 J | 78.2 J | 118 J | 44.1 | 137 | 292 | 19100 J | 1060 | 1340 | 5120 J |
| METALS | MAGNESIUM | MG/KG | 958 J | 804 J | 749 J | 756 J | 437 J | 587 J | 462 J | 1690 J | 732 J | 145 J | 380 J | 325 J | 502 J | 2770 J | 1030 J | 3420 J | 135 J | 119 J | 178 J | 342 J |
| METALS | MANGANESE | MG/KG | 56.8 J | 88.7 J | 57.9 J | 74.2 J | 32.4 J | 46.9 J | 78.7 J | 143 J | 153 J | 30.8 | 96.1 J | 75.3 J | 148 J | 73.8 J | 24.3 J | 79.9 J | 28.1 J | 23.5 | 29.3 | 160 J |
| METALS | MERCURY | MG/KG | 0.47 J | 0.51 J | 0.8 J | 0.4 J | 0.32 J | 0.32 J | 0.4 J | 0.38 J | 0.53 J | 0.21 | 0.47 J | 0.33 J | 0.44 J | 0.069 U | 0.05 U | 0.077 U | 1.3 J | 0.19 | 0.24 | 0.21 J |
| METALS | NICKEL | MG/KG | 13.1 J | 12.4 J | 11.2 J | 12.2 J | 6.9 J | 7.1 J | 10 J | 17.3 J | 18.7 J | 5 J | 14.6 J | 11.4 J | 13.9 J | 5.3 J | 2 J | 10.9 J | 9.4 J | 2.2 J | 3 | 7.5 J |
| METALS | POTASSIUM | MG/KG | 582 UJ | 514 UJ | 591 UJ | 470 UJ | 510 J | 453 UJ | 714 UJ | 2670 J | 826 UJ | 131 U | 383 UJ | 265 UJ | 375 UJ | 599 J | 354 J | 892 J | 213 J | 118 J | 109 UJ | 112 UJ |
| METALS | SELENIUM | MG/KG | 4.8 J | 4.5 J | 4.1 J | 4.3 J | 1.8 UJ | 2.3 UJ | 3.6 UJ | 6.1 UJ | 4.1 UJ | 1.8 | 4.5 UJ | 3.1 UJ | 4.4 UJ | 1.3 U | 0.81 U | 2.8 J | 2.9 J | 1.1 U | 1.1 U | 2.5 UJ |
| METALS | SILVER | MG/KG | 1.3 UJ | 1.7 J | 2.7 J | 2.7 J | 0.85 J | 1 UJ | 1.6 UJ | 2.7 UJ | 1.8 UJ | 0.56 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 U | 0.38 U | 0.65 U | 0.66 UJ | 0.31 J | 0.28 U | 0.63 UJ |
| METALS | SODIUM | MG/KG | 401 J | 349 UJ | 402 UJ | 319 UJ | 352 J | 308 UJ | 485 UJ | 837 UJ | 685 J | 220 U | 644 UJ | 446 UJ | 631 UJ | 309 J | 177 J | 227 J | 174 UJ | 124 UJ | 131 UJ | 166 UJ |
| METALS | THALLIUM | MG/KG | 5.3 UJ | 9.7 J | 5.3 UJ | 4.2 UJ | 3.3 UJ | 4.1 UJ | 6.4 UJ | 11.1 UJ | 7.4 UJ | 2 U | 5.7 UJ | 4 UJ | 5.6 UJ | 2.4 U | 1.5 U | 2.5 U | 9.9 J | 1.7 U | 1.8 U | 4.1 UJ |
| METALS | VANADIUM | MG/KG | 42.8 J | 59.3 J | 65 J | 33.5 J | 26.1 J | 28.4 J | 26.3 J | 32.9 J | 31 J | 6.9 J | 22.7 J | 18.1 J | 26.3 J | 12.4 J | 5.8 J | 35.1 J | 12.8 J | 5.7 J | 6.1 J | 13.1 J |
| METALS | ZINC | MG/KG | 282 J | 338 J | 282 J | 323 J | 122 J | 162 J | 193 J | 227 J | 542 J | 162 J | 620 J | 287 J | 392 J | 116 J | 37.6 J | 162 J | 740 J | R | R | 284 J |
| PEST/PCB | 4,4'-DDD | MG/KG | 0.029 J | 0.025 J | 0.025 J | 0.018 J | 0.019 J | 0.03 J | 0.054 J | 0.024 UJ | 0.018 J | 0.024 | 0.084 J | 0.012 J | 0.01 J | 0.0061 UJ | 0.0047 J | 0.0065 J | | | | |
| PEST/PCB | 4,4'-DDE | MG/KG | 0.026 J | 0.044 J | R | 0.024 J | 0.022 J | 0.025 J | 0.028 J | 0.024 UJ | 0.021 J | 0.024 | 0.095 J | 0.015 J | 0.018 J | 0.0061 UJ | 0.0024 J | 0.0082 J | | | | |
| PEST/PCB | 4,4'-DDT | MG/KG | 0.011 UJ | R | R | 0.0097 UJ | 0.0075 UJ | 0.0089 UJ | 0.013 UJ | 0.024 UJ | 0.017 U | 0.0061 U | 0.016 J | 0.011 J | 0.016 UJ | 0.0061 UJ | 0.0031 J | 0.0035 J | | | | |
| PEST/PCB | ALDRIN | MG/KG | 0.0057 UJ | 0.0055 UJ | 0.0053 UJ | 0.005 UJ | 0.0039 UJ | 0.0046 UJ | 0.0068 UJ | 0.012 UJ | 0.0085 UJ | 0.0031 U | 0.0085 UJ | 0.0057 UJ | 0.0085 UJ | 0.0031 UJ | 0.002 UJ | 0.0031 UJ | | | | |
| PEST/PCB | ALPHA-BHC | MG/KG | 0.0057 UJ | 0.0055 UJ | 0.0053 UJ | 0.005 UJ | 0.0039 UJ | 0.0046 UJ | 0.0068 UJ | 0.012 UJ | 0.0085 UJ | 0.0031 U | 0.0085 UJ | 0.0057 UJ | 0.0085 UJ | 0.0031 UJ | 0.002 UJ | 0.0031 UJ | | | | |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | 0.015 J | 0.048 J | 0.052 J | 0.028 J | 0.014 J | 0.019 J | 0.0036 J | 0.012 UJ | 0.013 J | 0.0038 J | 0.0082 J | 0.01 J | 0.011 J | 0.0081 J | 0.027 J | 0.0031 UJ | | | | |
| PEST/PCB | AROCLOR-1016 | MG/KG | 0.11 UJ | 0.11 UJ | 0.1 UJ | 0.097 UJ | 0.075 UJ | 0.089 UJ | 0.13 UJ | 0.24 UJ | 0.17 UJ | 0.061 U | 0.17 UJ | 0.11 UJ | 0.16 UJ | 0.061 UJ | 0.04 UJ | 0.061 UJ | 0.064 UJ | 0.023 U | 0.025 U | 0.057 UJ |
| PEST/PCB | AROCLOR-1221 | MG/KG | 0.22 UJ | 0.22 UJ | 0.21 UJ | 0.2 UJ | 0.15 UJ | 0.18 UJ | 0.27 UJ | 0.48 UJ | 0.34 UJ | 0.12 U | 0.34 UJ | 0.22 UJ | 0.33 UJ | 0.12 UJ | 0.081 UJ | 0.12 UJ | 0.064 UJ | 0.023 U | 0.025 U | 0.057 UJ |
| PEST/PCB | AROCLOR-1232 | MG/KG | 0.11 UJ | 0.11 UJ | 0.1 UJ | 0.097 UJ | 0.075 UJ | 0.089 UJ | 0.13 UJ | 0.24 UJ | 0.17 UJ | 0.061 U | 0.17 UJ | 0.11 UJ | 0.16 UJ | 0.061 UJ | 0.04 UJ | 0.061 UJ | 0.064 UJ | 0.023 U | 0.025 U | 0.057 UJ |
| PEST/PCB | AROCLOR-1242 | MG/KG | 0.11 UJ | 0.11 UJ | 0.1 UJ | 0.097 UJ | 0.075 UJ | 0.089 UJ | 0.13 UJ | 0.24 UJ | 0.17 UJ | 0.061 U | 0.17 UJ | 0.11 UJ | 0.16 UJ | 0.061 UJ | 0.04 UJ | 0.061 UJ | 0.064 UJ | 0.023 U | 0.025 U | 0.057 UJ |
| PEST/PCB | AROCLOR-1248 | MG/KG | 0.11 UJ | 0.11 UJ | 0.1 UJ | 0.097 UJ | 0.075 UJ | 0.089 UJ | 0.13 UJ | 0.24 UJ | 0.17 UJ | 0.061 U | 0.17 UJ | 0.11 UJ | 0.16 UJ | 0.061 UJ | 0.04 UJ | 0.061 UJ | 0.064 UJ | 0.023 U | 0.025 U | 0.057 UJ |
| PEST/PCB | AROCLOR-1254 | MG/KG | 0.17 J | 0.5 J | 0.57 J | 0.19 J | 0.18 J | 0.31 J | 0.13 UJ | 0.12 J | 0.25 J | 0.061 U | 0.17 UJ | 0.21 J | 0.25 J | 0.061 UJ | 0.058 UJ | 0.061 UJ | 0.064 UJ | 0.023 U | 0.025 U | 0.057 UJ |
| PEST/PCB | AROCLOR-1260 | MG/KG | 0.071 J | 0.15 J | 0.16 J | 0.066 J | 0.061 J | 0.089 J | 0.13 UJ | 0.24 UJ | 0.094 J | 0.061 U | 0.17 UJ | 0.064 J | 0.16 UJ | 0.061 UJ | 0.04 UJ | 0.061 UJ | 0.064 UJ | 0.067 | 0.078 | 0.067 J |
| PEST/PCB | AROCLOR-1262 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1268 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | BETA-BHC | MG/KG | 0.0057 UJ | 0.0046 J | 0.0066 J | 0.005 UJ | 0.0039 UJ | 0.0046 UJ | 0.0068 UJ | 0.012 UJ | 0.0085 UJ | 0.0031 U | 0.0085 UJ | 0.0057 UJ | 0.0085 UJ | 0.0031 UJ | 0.002 UJ | 0.0031 UJ | | | | |
| PEST/PCB | DELTA-BHC | MG/KG | 0.0057 UJ | 0.0055 UJ | 0.0053 UJ | 0.005 UJ | 0.0039 UJ | 0.0046 UJ | 0.0068 UJ | 0.012 UJ | 0.0085 UJ | 0.0031 U | 0.0085 UJ | 0.0057 UJ | 0.0085 UJ | 0.0031 UJ | 0.002 UJ | 0.0031 UJ | | | | |
| PEST/PCB | DIELDRIN | MG/KG | 0.011 UJ | 0.015 J | 0.017 J | 0.0056 J | 0.0075 UJ | 0.0089 UJ | 0.013 UJ | 0.024 UJ | 0.017 UJ | 0.0061 U | 0.017 UJ | 0.011 UJ | 0.016 UJ | 0.0061 UJ | 0.004 UJ | 0.0061 UJ | | | | |
| PEST/PCB | ENDOSULFAN I | MG/KG | 0.0057 UJ | 0.0055 UJ | 0.0053 UJ | 0.005 UJ | 0.0039 UJ | 0.0046 UJ | 0.0068 UJ | 0.012 UJ | 0.0085 UJ | 0.0031 U | 0.0085 UJ | 0.0057 UJ | 0.0085 UJ | 0.0031 UJ | 0.002 UJ | 0.0031 UJ | | | | |
| PEST/PCB | ENDOSULFAN II | MG/KG | 0.011 UJ | 0.011 UJ | 0.01 UJ | 0.0097 UJ | 0.0075 UJ | 0.0089 UJ | 0.013 UJ | 0.024 UJ | 0.017 UJ | 0.0061 U | 0.017 UJ | 0.011 UJ | 0.016 UJ | 0.0061 UJ | 0.003 J | 0.0061 UJ | | | | |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | 0.011 UJ | 0.011 UJ | 0.01 UJ | 0.0097 UJ | 0.0075 UJ | 0.0089 UJ | 0.013 UJ | 0.024 UJ | 0.017 UJ | 0.0061 U | 0.017 UJ | 0.011 UJ | 0.016 UJ | 0.0061 UJ | 0.004 UJ | 0.0061 UJ | | | | |
| PEST/PCB | ENDRIN | MG/KG | 0.011 UJ | 0.011 UJ | 0.01 UJ | 0.0097 UJ | 0.0075 UJ | 0.0089 UJ | 0.013 UJ | 0.024 UJ | 0.017 UJ | 0.0061 U | 0.017 UJ | 0.011 UJ | 0.016 UJ | 0.0061 UJ | 0.004 UJ | 0.0061 UJ | | | | |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | 0.011 UJ | 0.0072 J | 0.01 UJ | 0.0097 UJ | 0.0075 UJ | 0.0089 UJ | 0.013 UJ | 0.024 UJ | 0.017 UJ | 0.0061 U | 0.017 UJ | 0.011 UJ | 0.016 UJ | 0.0061 UJ | 0.004 UJ | 0.0061 UJ | | | | |
| PEST/PCB | ENDRIN KETONE | MG/KG | 0.011 UJ | 0.011 UJ | 0.01 UJ | 0.0097 UJ | 0.0075 UJ | 0.0089 UJ | 0.013 UJ | 0.024 UJ | 0.017 UJ | 0.0061 U | 0.017 UJ | 0.011 UJ | 0.016 UJ | 0.0061 UJ | 0.004 UJ | 0.0061 UJ | | | | |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | 0.0057 UJ | 0.0055 UJ | 0.0053 UJ | 0.005 UJ | 0.0039 UJ | 0.0046 UJ | 0.0068 UJ | 0.012 UJ | 0.0085 UJ | 0.0031 U | 0.0085 UJ | 0.0057 UJ | 0.0085 UJ | 0.0031 UJ | 0.002 UJ | 0.0031 UJ | | | | |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | 0.011 J | 0.036 J | 0.039 J | 0.025 J | 0.011 J | 0.014 J | 0.0068 UJ | 0.012 UJ | 0.0095 J | 0.0031 U | 0.0085 UJ | 0.0083 J | 0.0085 UJ | 0.005 J | 0.031 J | 0.0031 UJ | | | | |
| PEST/PCB | HEPTACHLOR | MG/KG | 0.0057 UJ | 0.0055 UJ | 0.0053 UJ | 0.005 UJ | 0.0039 UJ | 0.0046 UJ | 0.0068 UJ | 0.012 UJ | 0.0085 UJ | 0.0031 U | 0.0085 UJ | 0.0057 UJ | 0.0085 UJ | 0.0031 UJ | 0.002 UJ | 0.0031 UJ | | | | |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | 0.0057 UJ | 0.0053 J | 0.0053 UJ | 0.005 UJ | 0.0039 UJ | 0.0046 UJ | 0.0068 UJ | 0.012 UJ | 0.0085 UJ | 0.0038 J | 0.013 J | 0.0057 UJ | 0.0085 UJ | 0.0031 UJ | 0.0012 J | 0.0031 UJ | | | | |
| PEST/PCB | METHOXYCHLOR | MG/KG | 0.057 UJ | 0.055 UJ | 0.053 UJ | 0.05 UJ | 0.039 UJ | 0.046 UJ | 0.068 UJ | 0.12 UJ | 0.085 UJ | 0.031 U | 0.085 UJ | 0.057 UJ | 0.085 UJ | 0.031 UJ | 0.02 UJ | 0.031 UJ | | | | |
| PEST/PCB | TOXAPHENE | MG/KG | 0.57 UJ | 0.55 UJ | 0.53 UJ | 0.5 UJ | 0.39 UJ | 0.46 UJ | 0.68 UJ | 1.2 UJ | 0.85 UJ | 0.31 U | 0.85 UJ | 0.57 UJ | 0.85 UJ | 0.31 UJ | 0.2 UJ | 0.31 UJ | | | | |
| SVOC | 1,1'-BIPHENYL | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | 1,2,4,5-TETRACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | 2,3,4,6-TETRACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | 2.8 UJ | 2.7 UJ | 2.6 UJ | 2.4 UJ | 1.9 UJ | 2.2 UJ | 3.3 UJ | 5.9 UJ | 4.1 UJ | 1.5 U | 4.1 UJ | 2.8 UJ | 4.2 UJ | 1.5 UJ | 1 UJ | 1.5 UJ | | | | |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | 2,4-DINITROPHENOL | MG/KG | 2.8 UJ | 2.7 UJ | 2.6 UJ | 2.4 UJ | 1.9 UJ | 2.2 UJ | 3.3 UJ | 5.9 UJ | 4.1 UJ | 1.5 U | 4.1 UJ | 2.8 UJ | 4.2 UJ | 1.5 UJ | 1 UJ | 1.5 UJ | | | | |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | 2-CHLOROPHENOL | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.054 J | | | | |
| SVOC | 2-METHYLPHENOL | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | 2-NITROANILINE | MG/KG | 2.8 UJ | 2.7 UJ | 2.6 UJ | 2.4 UJ | 1.9 UJ | 2.2 UJ | 3.3 UJ | 5.9 UJ | 4.1 UJ | 1.5 U | 4.1 UJ | 2.8 UJ | 4.2 UJ | 1.5 UJ | 1 UJ | 1.5 UJ | | | | |
| SVOC | 2-NITROPHENOL | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | R | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | 3-NITROANILINE | MG/KG | 2.8 UJ | 2.7 UJ | 2.6 UJ | 2.4 UJ | 1.9 UJ | 2.2 UJ | 3.3 UJ | 5.9 UJ | 4.1 UJ | 1.5 U | 4.1 UJ | 2.8 UJ | 4.2 UJ | 1.5 UJ | 1 UJ | 1.5 UJ | | | | |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | 2.8 UJ | 2.7 UJ | 2.6 UJ | 2.4 UJ | 1.9 UJ | 2.2 UJ | 3.3 UJ | 5.9 UJ | 4.1 UJ | 1.5 U | 4.1 UJ | 2.8 UJ | 4.2 UJ | 1.5 UJ | 1 UJ | 1.5 UJ | | | | |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | 4-CHLOROANILINE | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.1 J | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | 4-METHYLPHENOL | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | 4-NITROANILINE | MG/KG | 2.8 UJ | 2.7 UJ | 2.6 UJ | 2.4 UJ | 1.9 UJ | 2.2 UJ | 3.3 UJ | 5.9 UJ | 4.1 UJ | 1.5 U | 4.1 UJ | 2.8 UJ | 4.2 UJ | 1.5 UJ | 1 UJ | 1.5 UJ | | | | |
| SVOC | 4-NITROPHENOL | MG/KG | 2.8 UJ | 2.7 UJ | 2.6 UJ | 2.4 UJ | 1.9 UJ | 2.2 UJ | 3.3 UJ | 5.9 UJ | 4.1 UJ | 1.5 U | 4.1 UJ | 2.8 UJ | 4.2 UJ | 1.5 UJ | 1 UJ | 1.5 UJ | | | | |
| SVOC | ACENAPHTHENE | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.036 J | 0.11 J | 0.18 J | 1.3 UJ | 0.078 J | 0.32 J | 1.1 UJ |
| SVOC | ACENAPHTHYLENE | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.094 J | 0.25 J | 1.3 UJ | 0.46 U | 0.49 U | 1.1 UJ |
| SVOC | ACETOPHENONE | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | ANTHRACENE | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 0.089 J | 1.1 UJ | 1.6 UJ | 0.095 J | 0.26 J | 0.42 J | 1.3 UJ | 0.14 J | 0.48 J | 1.1 UJ |
| SVOC | ATRAZINE | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | BENZALDEHYDE | MG/KG | 0.29 J | 0.25 J | 0.22 J | 0.97 UJ | 0.14 J | 0.32 J | 0.2 J | 1.6 J | 0.86 J | 0.38 J | 1.5 J | 0.74 J | 0.8 J | 0.093 J | 0.4 UJ | 0.053 J | | | | |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.25 J | 0.28 J | 0.26 J | 0.22 J | 0.18 J | 0.11 J | 0.19 J | 2.4 UJ | 0.26 J | 0.099 J | 0.39 J | 0.22 J | 0.22 J | 0.67 J | 1.9 J | 2.1 J | 0.088 J | 0.59 | 1.5 | 0.44 J |
| SVOC | BENZO(A)PYRENE | MG/KG | 0.29 J | 0.34 J | 0.21 J | 0.26 J | 0.19 J | 0.14 J | 0.23 J | 0.14 J | 0.32 J | 0.1 J | 0.41 J | R | 0.25 J | 0.79 J | 2 J | 1.9 J | 0.083 J | 0.59 | 1.4 | 0.61 J |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 0.43 J | 0.47 J | 0.46 J | 0.38 J | 0.38 J | 0.24 J | 0.37 J | 2.4 UJ | 0.52 J | 0.13 J | 0.48 J | R | 0.34 J | 1.2 J | 2.2 J | 2.4 J | 0.1 J | 0.59 | 1.1 | 0.61 J |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.23 J | 0.24 J | 0.25 J | 0.16 J | 0.15 J | 0.89 UJ | 1.3 UJ | 2.4 UJ | 0.26 J | 0.61 UJ | 1.6 UJ | R | 0.2 J | 0.38 J | 0.69 J | 0.64 J | 0.093 J | 0.29 J | 0.6 | 0.67 J |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.41 J | 0.46 J | 0.46 J | 0.31 J | 0.21 J | 0.23 J | 0.26 J | 2.4 UJ | 0.43 J | 0.16 J | 0.43 J | R | 0.3 J | 0.85 J | 1.9 J | 1.7 J | 0.074 J | 0.64 | 1.7 | 0.94 J |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | 1.1 UJ | 0.18 J | 0.18 J | 0.24 J | 0.75 UJ | 0.14 J | 1.3 UJ | 2.4 UJ | 0.22 J | 0.61 U | 1.6 UJ | R | 0.46 J | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |

Table 2 Sediment Data (Including Field Duplicates and Rejected Data)

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCDD0062 | HCDD0063 | HCDD0063 | HCDD0064 | HCDD0065 | HCDD0066 | HCDD0067 | HCDD0068 | HCDD0069 | HCDD0070 | HCDD0070 | HCDD0071 | HCDD0072 | HCDD0074 | HCDD0075 | HCDD0076 | HCDD0077 | HCDD0078 | HCDD0078 | HCDD0079 |
| | | Field Sample ID | HCDD0062-SD-AA-AB-0 | HCDD0063-SD-AA-AB-0 | HCDD0063-SD-AA-AB-1 | HCDD0064-SD-AA-AB-0 | HCDD0065-SD-AA-AB-0 | HCDD0066-SD-AA-AB-0 | HCDD0067-SD-AA-AB-0 | HCDD0068-SD-AA-AB-0 | HCDD0069-SD-AA-AB-0 | HCDD0070-SD-AA-AB-0 | HCDD0070-SD-AA-AB-1 | HCDD0071-SD-AA-AB-0 | HCDD0072-SD-AA-AB-0 | HCDD0074-SD-AA-AB-0 | HCDD0075-SD-AA-AB-0 | HCDD0076-SD-AA-AB-0 | HCDD0077-SD-AA-AB-0 | HCDD0078-SD-AA-AB-0 | HCDD0078-SD-AA-AB-1 | HCDD0079-SD-AA-AB-0 |
| | | Sample Date | 8/9/05 | 8/9/05 | 8/9/05 | 8/9/05 | 8/10/05 | 8/10/05 | 8/10/05 | 8/10/05 | 8/10/05 | 8/11/05 | 8/11/05 | 8/11/05 | 8/11/05 | 9/21/05 | 9/21/05 | 9/21/05 | 6/28/06 | 6/29/06 | 6/29/06 | 7/6/06 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | 0.26 J | 0.76 J | 0.82 J | 0.43 J | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 2.6 J | 2.5 | 10 J | 1.8 J | 1.4 J | 0.58 J | 0.15 J | 0.32 J | | | | |
| SVOC | CAPROLACTAM | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | CARBAZOLE | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.1 J | 0.1 J | 0.12 J | | | | |
| SVOC | CHRYSENE | MG/KG | 0.47 J | 0.48 J | 0.52 J | 0.35 J | 0.29 J | 0.26 J | 0.37 J | 0.28 J | 0.5 J | 0.16 J | 0.61 J | 0.41 J | 0.41 J | 0.99 J | 2.2 J | 2.4 J | 0.1 J | 0.69 | 1.6 | 0.86 J |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.068 J | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 UJ | 1.6 UJ | R | 1.6 UJ | 0.14 J | 0.22 J | 0.26 J | 1.3 UJ | 0.085 J | 0.49 U | 0.2 J |
| SVOC | DIBENZOFURAN | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.024 J | 0.073 J | | | | |
| SVOC | DIETHYLPHTHALATE | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | DIMETHYLPHTHALATE | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 0.058 J | 0.11 J | 0.61 UJ | 0.086 J | 0.61 UJ | | | | |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 UJ | 1.6 UJ | R | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | FLUORANTHENE | MG/KG | 0.49 J | 0.48 J | 0.51 J | 0.43 J | 0.39 J | 0.27 J | 0.41 J | 0.25 J | 0.65 J | 0.34 J | 1.1 J | 0.27 J | 0.62 J | 1.9 J | 4.2 J | 7.8 J | 0.13 J | 1.3 | 3.2 | 0.87 J |
| SVOC | FLUORENE | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.037 J | 0.12 J | 0.31 J | 1.3 UJ | 0.064 J | 0.24 J | 1.1 UJ |
| SVOC | HEXACHLOROBENZENE | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 UJ | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | HEXACHLOROETHANE | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.2 J | 0.22 J | 0.22 J | 0.13 J | 0.14 J | 0.89 UJ | 1.3 UJ | 2.4 UJ | 0.17 J | 0.61 UJ | 1.6 UJ | R | 0.14 J | 0.36 J | 0.64 J | 0.6 J | 0.084 J | 0.3 J | 0.62 | 0.55 J |
| SVOC | ISOPHORONE | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | NAPHTHALENE | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.021 J | 0.034 J | 1.3 UJ | 0.46 U | 0.086 J | 1.1 UJ |
| SVOC | NITROBENZENE | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | PENTACHLOROPHENOL | MG/KG | 2.8 UJ | 2.7 UJ | 2.6 UJ | 2.4 UJ | 1.9 UJ | 2.2 UJ | 3.3 UJ | 5.9 UJ | 4.1 UJ | 1.5 U | 4.1 UJ | 2.8 UJ | 4.2 UJ | 1.5 UJ | 1 UJ | 1.5 UJ | | | | |
| SVOC | PHENANTHRENE | MG/KG | 0.31 J | 0.29 J | 0.29 J | 0.21 J | 0.2 J | 0.14 J | 0.22 J | 0.18 J | 0.36 J | 0.14 J | 0.49 J | 0.25 J | 0.28 J | 0.79 J | 1.9 J | 2.5 J | 1.3 UJ | 0.62 J | 1.9 J | 0.42 J |
| SVOC | PHENOL | MG/KG | 1.1 UJ | 1.1 UJ | 1 UJ | 0.97 UJ | 0.75 UJ | 0.89 UJ | 1.3 UJ | 2.4 UJ | 1.6 UJ | 0.61 U | 1.6 UJ | 1.1 UJ | 1.6 UJ | 0.61 UJ | 0.4 UJ | 0.61 UJ | | | | |
| SVOC | PYRENE | MG/KG | 0.76 J | 0.7 J | 0.64 J | 0.37 J | 0.5 J | 0.37 J | 0.7 J | 0.45 J | 0.82 J | 0.26 J | 0.93 J | 0.81 J | 0.54 J | 1.4 J | 3.7 J | 6.1 J | 0.23 J | 0.98 | 2.3 | 1.4 J |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | 1,1-DICHLOROETHANE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | 1,1-DICHLOROETHENE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | 1,2,3-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 UJ | 0.01 UJ | 0.016 UJ | | | | |
| VOC | 1,2-DIBROMOETHANE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.006 J | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | 1,2-DICHLOROETHANE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | 1,4-DIOXANE (P-DIOXANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 UJ | 0.01 UJ | 0.016 UJ | | | | |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 UJ | 0.01 UJ | 0.016 UJ | | | | |
| VOC | ACETONE | MG/KG | 0.055 J | 0.074 J | 0.082 J | 0.065 J | 0.07 J | 0.055 J | 0.12 J | 0.43 J | 0.25 J | 0.073 U | 0.15 UJ | 0.08 UJ | 0.2 J | 0.018 J | 0.007 J | 0.056 J | | | | |
| VOC | BENZENE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | BROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | BROMOFORM | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | BROMOMETHANE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | CARBON DISULFIDE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | CARBON TETRACHLORIDE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | CHLOROBENZENE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | CHLOROETHANE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | CHLOROFORM | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | CHLOROMETHANE | MG/KG | 0.012 J | 0.006 J | 0.005 J | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.011 J | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | CYCLOHEXANE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | DICHLOROMETHANE | MG/KG | 0.005 J | 0.005 J | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.007 J | 0.006 J | 0.009 J | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | ETHYLBENZENE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | ISOPROPYLBENZENE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | METHYL ACETATE | MG/KG | 0.013 J | 0.008 J | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.053 | 0.01 U | 0.003 J | | | | |
| VOC | METHYL ETHYL KETONE | MG/KG | 0.021 J | 0.029 J | 0.032 J | 0.026 J | 0.026 J | 0.022 J | 0.047 J | 0.17 J | 0.096 J | 0.03 | 0.058 J | 0.032 J | 0.082 J | 0.005 J | 0.002 J | 0.02 | | | | |
| VOC | METHYLCYCLOHEXANE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | STYRENE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | TETRACHLOROETHENE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | TOLUENE | MG/KG | 0.12 J | 0.009 J | 0.017 J | 0.004 J | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.095 | 0.014 J | 0.006 J | 0.01 J | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 UJ | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | VINYL CHLORIDE | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |
| VOC | XYLENE, O- | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES, M & P | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | 0.048 UJ | 0.048 UJ | 0.044 UJ | 0.042 UJ | 0.032 UJ | 0.035 UJ | 0.064 UJ | 0.12 UJ | 0.084 UJ | 0.027 U | 0.064 UJ | 0.048 UJ | 0.082 UJ | 0.016 U | 0.01 U | 0.016 U | | | | |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCDD0080 | HCDD0081 | HCDD0082 | HCDD0083 | HCDD0084 | HCDD0084 | HCDD0085 | HCDD0086 | HCDD0087 | HCDD0088 | HCDD0089 | HCDD0090 | HCDD0091 | HCDD0091 | HCDD0092 | HCDD0092 | HCDD0093 | HCDD0094 | HCDD0095 | HCDD0096 |
| | | Field Sample ID | HCDD0080-SD-AA-AB-0 | HCDD0081-SD-AA-AB-0 | HCDD0082-SD-AA-AB-0 | HCDD0083-SD-AA-AB-0 | HCDD0084-SD-AA-AB-0 | HCDD0084-SD-AA-AB-1 | HCDD0085-SD-AA-AB-0 | HCDD0086-SD-AA-AB-0 | HCDD0087-SD-AA-AB-0 | HCDD0088-SD-AA-AB-0 | HCDD0089-SD-AA-AB-0 | HCDD0090-SD-AA-AB-0 | HCDD0091-SD-AA-AB-0 | HCDD0091-SD-AA-AB-1 | HCDD0092-SD-AA-AB-0 | HCDD0092-SD-AA-AB-1 | HCDD0093-SD-AA-AB-0 | HCDD0094-SD-AA-AB-0 | HCDD0095-SD-AA-AB-0 | HCDD0096-SD-AA-AB-0 |
| | | Sample Date | 7/6/06 | 7/7/06 | 7/7/06 | 7/10/06 | 7/10/06 | 7/10/06 | 7/11/06 | 7/12/06 | 7/12/06 | 7/18/06 | 7/18/06 | 7/19/06 | 7/20/06 | 7/20/06 | 7/31/06 | 7/31/06 | 7/31/06 | 8/2/06 | 8/2/06 | 8/3/06 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 9080 J | 11900 | 2090 | 3930 J | 6760 J | 6920 J | 2340 | 2740 J | 1080 | 2060 | 2460 | 6590 J | 1850 J | 1080 J | 2420 | 1930 | 1330 | 1960 | 3920 | 5040 J |
| METALS | ANTIMONY | MG/KG | 4.6 J | 1.8 U | 1.4 U | 4 J | 3.6 J | 3.2 J | 0.86 U | 2 J | 1.3 J | 2 J | 1.5 U | 6.2 UJ | 0.76 UJ | 0.73 UJ | 0.84 U | 0.89 U | 1.6 J | 0.81 U | 1.1 U | 1.7 J |
| METALS | ARSENIC | MG/KG | 498 J | 17.7 | 29.6 | 44.2 J | 261 J | 345 J | 40.7 | 26.3 J | 33.4 J | 13.3 J | 3.6 J | 149 J | 10.3 | 13.1 | 6.2 | 6.7 | 16.1 | 34.6 | 17.8 | 162 J |
| METALS | BARIUM | MG/KG | 786 J | 22.9 J | 211 | 186 J | 526 J | 559 J | 149 | 109 J | 88 | 130 | 33.5 J | 774 J | 47.4 | 42 | 39.4 J | 19.5 J | 110 | 106 | 73 | 535 J |
| METALS | BERYLLIUM | MG/KG | 0.58 J | 0.19 J | 0.14 J | 0.34 J | 0.42 J | 0.35 J | 0.17 J | 0.24 J | 0.1 J | 0.12 J | 0.22 J | 0.64 J | 0.02 U | 0.02 U | 0.25 J | 0.17 J | 0.09 J | 0.14 J | 0.34 J | 0.35 J |
| METALS | CADMIUM | MG/KG | 6.7 J | 0.09 U | 0.27 J | 1.9 J | 1.6 J | 2.8 J | 1.3 | 1.3 J | 0.84 J | 0.32 J | 0.08 U | 5.4 J | 0.5 J | 0.55 J | 0.51 J | 0.3 J | 0.4 J | 0.8 J | 0.34 J | 1.4 J |
| METALS | CALCIUM | MG/KG | 12700 J | 693 J | 1140 | 4970 J | 5550 J | 12300 J | 1480 | 4910 J | 1170 J | 3210 | 1830 | 6680 J | 1720 | 856 J | 583 J | 485 J | 1690 J | 2460 | 2780 | 2410 J |
| METALS | CHROMIUM | MG/KG | 1400 J | 28.5 | 96.2 | 87.5 J | 225 J | 215 J | 55.9 J | 65.8 J | 52.1 | 36.7 | 10.6 | 350 J | 17.1 | 23.9 | 11.5 | 13.7 | 42 | 55.5 J | 12.2 J | 510 J |
| METALS | COBALT | MG/KG | 5.5 J | 1.1 J | 2 J | 2.9 J | 3.6 J | 3.7 J | 3.6 J | 1.9 J | 1.3 J | 1.6 J | 1.3 J | 11.1 J | 1.2 J | 0.79 J | 0.89 J | 0.71 J | 1.8 J | 0.79 J | 2.6 J | 2.2 J |
| METALS | COPPER | MG/KG | 320 J | 9.5 | 26.4 | 32.7 J | 71.4 J | 65 J | 18.4 | 16.8 J | 10.9 J | 14.1 J | 4.6 J | 85.8 J | 7.1 | 11 | 19.4 J | 19.1 | 14.2 J | 14.1 | 2.6 J | 83.4 J |
| METALS | CYANIDE | MG/KG | 98.4 J | 2.1 | 7.8 | 6.7 J | 17.6 J | 19.4 J | 0.89 | 2.8 J | 4.3 | 1.7 | 0.59 U | 13.8 J | 0.72 | 0.71 | 1.7 | 1.9 | 2.3 | 0.69 J | 0.93 UJ | 6.3 J |
| METALS | IRON | MG/KG | 22500 J | 21900 | 4540 | 7110 J | 15800 J | 19500 J | 5190 | 4450 J | 4280 | 6030 | 5770 | 26800 J | 3530 | 3560 | 8960 | 5870 | 5370 | 4990 | 2870 | 14700 J |
| METALS | LEAD | MG/KG | 14600 J | 21.1 | 752 | 1500 J | 3650 J | 3510 J | 491 J | 699 J | 608 | 244 | 67.7 | 3270 J | 208 | 295 | 106 | 83.4 | 176 | 646 | 46.7 | 8790 J |
| METALS | MAGNESIUM | MG/KG | 421 J | 217 J | 327 J | 481 J | 588 J | 613 J | 19.4 U | 159 J | 91.5 J | 915 J | 1060 | 875 J | 201 J | 198 J | 249 J | 560 J | 817 J | 123 J | 170 J | 210 J |
| METALS | MANGANESE | MG/KG | 127 J | 15.9 | 17.9 | 143 J | 146 J | 135 J | 32.1 | 68.7 J | 149 | 56.7 | 42 | 189 J | 18.4 | 22.1 | 12.7 J | 19.6 | 76.7 J | 33.1 | 23.5 | 110 J |
| METALS | MERCURY | MG/KG | 0.64 J | 0.067 U | 0.059 J | 0.11 UJ | 0.18 J | 0.24 J | 0.13 | 0.11 UJ | 0.072 U | 0.053 U | 0.041 U | 0.18 UJ | 0.04 U | 0.051 U | 0.052 U | 0.061 U | 0.075 J | 0.062 U | 0.088 U | 0.14 J |
| METALS | NICKEL | MG/KG | 14.3 J | 2 J | 2.6 J | 5 J | 5.4 J | 5.5 J | 3.7 J | 3.9 J | 1.9 J | 3.3 J | 3 J | 17.1 J | 2.7 J | 2 J | 1.4 J | 3.4 J | 2 J | 2.3 J | 3.5 J | 6.5 J |
| METALS | POTASSIUM | MG/KG | 220 J | 83.1 J | 161 J | 173 J | 421 J | 441 J | 125 J | 113 J | 65 J | 273 J | 595 J | 248 J | 134 J | 87.4 J | 332 J | 253 J | 133 J | 91.6 J | 94.5 J | 149 J |
| METALS | SELENIUM | MG/KG | 4.8 UJ | 1.1 U | 0.89 U | 1.9 UJ | 1.2 J | 1.4 UJ | 0.86 U | 1.6 UJ | 0.98 UJ | 1.1 U | 0.91 U | 3.1 UJ | 1.1 J | 0.73 UJ | 0.84 U | 1.7 | 0.69 U | 1 U | 1.7 J | 3.1 J |
| METALS | SILVER | MG/KG | 1.2 UJ | 0.45 U | 0.37 U | 0.98 UJ | 0.63 UJ | 0.7 UJ | 0.27 U | 0.48 UJ | 0.3 U | 0.46 U | 0.38 U | 0.95 UJ | 0.39 U | 0.38 U | 0.26 U | 0.27 U | 0.21 U | 0.42 U | 0.59 U | 0.38 UJ |
| METALS | SODIUM | MG/KG | 314 UJ | 71.9 U | 128 J | 272 J | 174 UJ | 195 UJ | 69.9 UJ | 126 UJ | 79.8 U | 276 J | 482 J | 250 UJ | 108 U | 105 U | 68 U | 72.1 U | 55.6 U | 66 U | 92.8 U | 99.4 UJ |
| METALS | THALLIUM | MG/KG | 7.7 UJ | 1.2 U | 0.98 U | 2.6 UJ | 1.7 UJ | 1.9 UJ | 1.7 U | 3.1 UJ | 2 U | 1.2 U | 1 U | 6.2 UJ | 1 U | 1 U | 1.7 U | 1.8 U | 1.4 U | 1.6 U | 2.3 U | 2.5 UJ |
| METALS | VANADIUM | MG/KG | 22.4 J | 28.3 | 7.6 J | 10.9 J | 18.3 J | 18.9 J | 8.9 J | 6.1 J | 4 J | 8.5 J | 9.2 J | 28.5 J | 5 J | 3.5 J | 6 J | 6.2 J | 9 J | 5.9 J | 7.8 J | 12.8 J |
| METALS | ZINC | MG/KG | 673 J | R | R | 126 J | 225 J | 234 J | R | 86.8 J | 84.3 | 88.2 J | 32.9 J | 664 J | 54.7 J | 64 J | R | R | R | 73.1 | 10.8 | 218 J |
| PEST/PCB | 4,4'-DDD | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDT | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1016 | MG/KG | 0.12 UJ | 0.024 U | 0.02 U | 0.054 UJ | 0.036 UJ | 0.041 UJ | 0.025 U | 0.043 UJ | 0.026 U | 0.024 U | 0.02 U | 0.083 UJ | 0.021 U | 0.02 U | 0.025 U | 0.026 U | 0.02 U | 0.023 U | 0.032 U | 0.037 UJ |
| PEST/PCB | AROCLOR-1221 | MG/KG | 0.12 UJ | 0.024 U | 0.02 U | 0.054 UJ | 0.036 UJ | 0.041 UJ | 0.025 U | 0.043 UJ | 0.026 U | 0.024 U | 0.02 U | 0.083 UJ | 0.021 U | 0.02 U | 0.025 U | 0.026 U | 0.02 U | 0.023 U | 0.032 U | 0.037 UJ |
| PEST/PCB | AROCLOR-1232 | MG/KG | 0.12 UJ | 0.024 U | 0.02 U | 0.054 UJ | 0.036 UJ | 0.041 UJ | 0.025 U | 0.043 UJ | 0.026 U | 0.024 U | 0.02 U | 0.083 UJ | 0.021 U | 0.02 U | 0.025 U | 0.026 U | 0.02 U | 0.023 U | 0.032 U | 0.037 UJ |
| PEST/PCB | AROCLOR-1242 | MG/KG | 0.12 UJ | 0.024 U | 0.02 U | 0.054 UJ | 0.036 UJ | 0.041 UJ | 0.025 U | 0.043 UJ | 0.026 U | 0.024 U | 0.02 U | 0.083 UJ | 0.021 U | 0.02 U | 0.025 U | 0.026 U | 0.02 U | 0.023 U | 0.032 U | 0.037 UJ |
| PEST/PCB | AROCLOR-1248 | MG/KG | 0.12 UJ | 0.024 U | 0.02 U | 0.054 UJ | 0.036 UJ | 0.041 UJ | 0.025 U | 0.043 UJ | 0.026 U | 0.024 U | 0.02 U | 0.083 UJ | 0.021 U | 0.02 U | 0.025 U | 0.026 U | 0.02 U | 0.023 U | 0.032 U | 0.037 UJ |
| PEST/PCB | AROCLOR-1254 | MG/KG | 0.12 UJ | 0.024 U | 0.02 U | 0.054 UJ | 0.036 UJ | 0.041 UJ | 0.038 | 0.043 UJ | 0.026 U | 0.024 U | 0.067 | 0.13 J | 0.024 J | 0.019 J | 0.025 U | 0.026 U | 0.044 | 0.023 U | 0.032 U | 0.037 UJ |
| PEST/PCB | AROCLOR-1260 | MG/KG | 0.12 J | 0.024 U | 0.02 U | 0.054 UJ | 0.049 J | 0.049 J | 0.029 | 0.043 UJ | 0.026 U | 0.024 U | 0.02 U | 0.12 J | 0.021 U | 0.02 U | 0.025 U | 0.026 U | 0.033 J | 0.023 U | 0.032 U | 0.037 UJ |
| PEST/PCB | AROCLOR-1262 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1268 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | BETA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DELTA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DIELDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN I | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN II | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | METHOXYCHLOR | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | TOXAPHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 1,1'-BIPHENYL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 1,2,4,5-TETRACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,3,4,6-TETRACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | ACENAPHTHENE | MG/KG | 2.4 UJ | 0.49 U | 0.4 U | 1.1 UJ | 0.72 UJ | 0.038 J | 0.028 J | 0.85 UJ | 0.52 U | 0.27 J | 0.72 J | 0.49 J | | | 0.48 U | 5.1 U | 0.058 J | 0.041 J | 0.63 U | 0.73 UJ |
| SVOC | ACENAPHTHYLENE | MG/KG | 2.4 UJ | 0.49 U | 0.4 U | 1.1 UJ | 0.72 UJ | 0.8 UJ | 0.49 U | 0.85 UJ | 0.52 U | 0.47 U | 2 U | 1.6 UJ | | | 0.48 U | 5.1 U | 0.39 U | 0.45 U | 0.63 U | 0.73 UJ |
| SVOC | ACETOPHENONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | ANTHRACENE | MG/KG | 2.4 UJ | 0.49 U | 0.033 J | 1.1 UJ | 0.72 UJ | 0.076 J | 0.048 J | 0.85 UJ | 0.52 U | 0.26 J | 1.7 J | 0.5 J | | | 0.034 J | 5.1 U | 0.1 J | 0.072 J | 0.63 U | 0.73 UJ |
| SVOC | ATRAZINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.62 J | 0.49 U | 0.16 J | 0.25 J | 0.25 J | 0.46 J | 0.32 J | 0.056 J | 0.059 J | 1.2 | 6 | 2.6 J | | | 0.34 J | 5.1 U | 0.54 | 0.28 J | 0.63 U | 0.19 J |
| SVOC | BENZO(A)PYRENE | MG/KG | 0.72 J | 0.49 U | 0.17 J | 0.26 J | 0.32 J | 0.51 J | 0.35 J | 0.053 J | 0.069 J | 0.97 | 5 | 2.5 J | | | 0.28 J | 5.1 U | 0.51 | 0.25 J | 0.63 U | 0.18 J |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 0.62 J | 0.49 U | 0.16 J | 0.28 J | 0.41 J | 0.69 J | 0.42 J | 0.054 J | 0.075 J | 0.76 | 4.6 | 2.5 J | | | 0.41 J | 5.1 U | 0.58 | 0.26 J | 0.63 U | 0.21 J |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.69 J | 0.49 U | 0.16 J | 0.22 J | 0.26 J | 0.31 J | 0.18 J | 0.049 J | 0.062 J | 0.57 | 2.3 J | 1.3 J | | | 0.14 J | 5.1 U | 0.25 J | 0.15 J | 0.63 U | 0.072 J |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 1.1 J | 0.49 U | 0.21 J | 0.36 J | 0.45 J | 0.5 J | 0.43 J | 0.069 J | 0.073 J | 1.1 | 4.8 | 3 J | | | 0.38 J | 5.1 U | 0.58 | 0.24 J | 0.63 U | 0.21 J |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCDD0080 | HCDD0081 | HCDD0082 | HCDD0083 | HCDD0084 | HCDD0084 | HCDD0085 | HCDD0086 | HCDD0087 | HCDD0088 | HCDD0089 | HCDD0090 | HCDD0091 | HCDD0091 | HCDD0092 | HCDD0092 | HCDD0093 | HCDD0094 | HCDD0095 | HCDD0096 |
| | | Field Sample ID | HCDD0080-SD-AA-AB-0 | HCDD0081-SD-AA-AB-0 | HCDD0082-SD-AA-AB-0 | HCDD0083-SD-AA-AB-0 | HCDD0084-SD-AA-AB-0 | HCDD0084-SD-AA-AB-1 | HCDD0085-SD-AA-AB-0 | HCDD0086-SD-AA-AB-0 | HCDD0087-SD-AA-AB-0 | HCDD0088-SD-AA-AB-0 | HCDD0089-SD-AA-AB-0 | HCDD0090-SD-AA-AB-0 | HCDD0091-SD-AA-AB-0 | HCDD0091-SD-AA-AB-1 | HCDD0092-SD-AA-AB-0 | HCDD0092-SD-AA-AB-1 | HCDD0093-SD-AA-AB-0 | HCDD0094-SD-AA-AB-0 | HCDD0095-SD-AA-AB-0 | HCDD0096-SD-AA-AB-0 |
| | | Sample Date | 7/6/06 | 7/7/06 | 7/7/06 | 7/10/06 | 7/10/06 | 7/10/06 | 7/11/06 | 7/12/06 | 7/12/06 | 7/18/06 | 7/18/06 | 7/19/06 | 7/20/06 | 7/20/06 | 7/31/06 | 7/31/06 | 7/31/06 | 8/2/06 | 8/2/06 | 8/3/06 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | CAPROLACTAM | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | CARBAZOLE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | CHRYSENE | MG/KG | 0.94 J | 0.49 U | 0.23 J | 0.42 J | 0.42 J | 0.73 J | 0.46 J | 0.08 J | 0.093 J | 1.3 | 6.6 | 3.2 J | | | 0.54 | 0.25 J | 0.7 | 0.35 J | 0.63 U | 0.27 J |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.22 J | 0.49 U | 0.042 J | 1.1 UJ | 0.72 UJ | 0.8 UJ | 0.048 J | 0.85 UJ | 0.52 U | 0.47 U | 0.39 UJ | 0.34 J | | | 0.044 J | 5.1 U | 0.068 J | 0.45 U | 0.63 U | 0.73 UJ |
| SVOC | DIBENZOFURAN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIMETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | FLUORANTHENE | MG/KG | 0.95 J | 0.49 U | 0.28 J | 0.41 J | 0.45 J | 0.91 J | 0.9 | 0.11 J | 0.12 J | 1.9 | 8.9 | 4.1 J | | | 0.39 J | 5.1 U | 1.2 | 0.6 | 0.03 J | 0.34 J |
| SVOC | FLUORENE | MG/KG | 2.4 UJ | 0.49 U | 0.019 J | 1.1 UJ | 0.72 UJ | 0.054 J | 0.028 J | 0.85 UJ | 0.52 U | 0.16 J | 0.69 J | 0.3 J | | | 0.48 U | 5.1 U | 0.093 J | 0.033 J | 0.63 U | 0.73 UJ |
| SVOC | HEXACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.6 J | 0.49 U | 0.13 J | 0.18 J | 0.23 J | 0.3 J | 0.17 J | 0.043 J | 0.056 J | 0.56 | 2.6 J | 1.2 J | | | 0.14 J | 5.1 U | 0.24 J | 0.14 J | 0.63 U | 0.078 J |
| SVOC | ISOPHORONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | NAPHTHALENE | MG/KG | 2.4 UJ | 0.49 U | 0.4 U | 1.1 UJ | 0.72 UJ | 0.8 UJ | 0.49 U | 0.85 UJ | 0.52 U | 0.47 U | 2 U | 1.6 UJ | | | 0.077 J | 0.29 J | 0.39 U | 0.45 U | 0.63 U | 0.73 UJ |
| SVOC | NITROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PENTACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PHENANTHRENE | MG/KG | 0.54 J | 0.49 U | 0.18 J | 0.26 J | 0.3 J | 0.71 J | 0.35 J | 0.042 J | 0.053 J | 1.2 | 7.2 | 2.9 J | | | 0.13 J | 5.1 U | 0.73 | 0.3 J | 0.63 U | 0.14 J |
| SVOC | PHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PYRENE | MG/KG | 1.7 J | 0.49 U | 0.55 J | 0.68 J | 0.75 J | 1.2 J | 0.66 | 0.12 J | 0.13 J | 3.3 | 14 | 5.7 J | | | 0.55 J | 0.3 J | 1.5 J | 0.65 | 0.034 J | 0.41 J |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,3-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMOETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,4-DIOXANE (P-DIOXANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | ACETONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOFORM | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON DISULFIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON TETRACHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROFORM | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | ETHYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | ISOPROPYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ACETATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ETHYL KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYLCYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | STYRENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TETRACHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | VINYL CHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENE, O- | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES, M & P | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | | | | | | | | | | | | | | | | | | | | |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCDD0097 | HCDD0098 | HCDD0101 | HCDD0102 | HCDD0103 | HCDD0104 | HCDD0107 | HCDD0108 | HCDD0109 | HCDD0110 | HCDD0110 | HCDD0112 | HCDD0113 | HCDD0114 | HCDD0115 | HCDD0116 | HCDD0116 | HCDD0117 | HCDD0118 | HCDD0119 |
| | | Field Sample ID | HCDD0097-SD-AA-AB-0 | HCDD0098-SD-AA-AB-0 | HCDD0101-SD-AA-AB-0 | HCDD0102-SD-AA-AB-0 | HCDD0103-SD-AA-AB-0 | HCDD0104-SD-AA-AB-0 | HCDD0107-SD-AA-AB-0 | HCDD0108-SD-AA-AB-0 | HCDD0109-SD-AA-AB-0 | HCDD0110-SD-AA-AB-0 | HCDD0110-SD-AA-AB-1 | HCDD0112-SD-AA-AB-0 | HCDD0113-SD-AA-AB-0 | HCDD0114-SD-AA-AB-0 | HCDD0115-SD-AA-AB-0 | HCDD0116-SD-AA-AB-0 | HCDD0116-SD-AA-AB-1 | HCDD0117-SD-AA-AB-0 | HCDD0118-SD-AA-AB-0 | HCDD0119-SD-AA-AB-0 |
| | | Sample Date | 8/7/06 | 8/7/06 | 8/16/06 | 8/16/06 | 8/16/06 | 8/16/06 | 8/23/06 | 8/23/06 | 8/29/06 | 8/29/06 | 8/29/06 | 8/29/06 | 8/29/06 | 8/30/06 | 8/30/06 | 8/31/06 | 8/31/06 | 8/31/06 | 8/31/06 | 8/31/06 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 1200 | 2190 | 3510 J | 9900 J | 4560 J | 3520 J | 2240 | 9490 J | 8240 J | 1590 | 1550 J | 1320 | 7410 J | 5340 J | 5040 J | 3920 | 4550 | 13000 J | 12900 J | 20100 J |
| METALS | ANTIMONY | MG/KG | 0.79 U | 0.78 U | 3.3 UJ | 5.1 UJ | 5.2 UJ | 3.2 UJ | 2 U | 4.2 UJ | 3.5 UJ | 1.6 UJ | 1.5 UJ | 1.4 UJ | 3.9 UJ | 3.7 UJ | 3.2 UJ | 1.1 J | 1.1 UJ | 2.5 UJ | 4.2 UJ | 3.6 UJ |
| METALS | ARSENIC | MG/KG | 22.4 | 79 | 104 J | 37.9 J | 345 J | 63.1 J | 77.1 | 245 J | R | R | R | R | R | R | R | 5.7 | 3.6 | 13.1 J | 24.5 J | 29 J |
| METALS | BARIUM | MG/KG | 88.1 | 154 | 220 J | 194 J | 199 J | 125 J | 156 | 182 J | 124 J | 46.6 | 45.5 J | 27.1 J | 181 J | 91.8 J | 95.1 J | 35.8 J | 39.4 J | 240 J | 348 J | 477 J |
| METALS | BERYLLIUM | MG/KG | 0.07 J | 0.13 J | 0.35 J | 0.91 J | 0.36 J | 0.37 J | 0.17 J | 0.76 J | 0.74 J | 0.15 J | 0.14 J | 0.1 J | 0.68 J | 0.36 J | 0.32 J | 0.33 J | 0.36 J | 0.88 J | 0.8 J | 1.3 J |
| METALS | CADMIUM | MG/KG | 0.57 J | 0.65 J | 2.7 J | 1.7 J | 1.9 J | 1.1 J | 0.84 J | 2.5 J | 5.9 J | 0.35 J | 0.44 J | 0.23 J | 1.9 J | 2.1 J | 1.5 J | 1.1 J | 0.16 J | 3.2 J | 4.3 J | 5.1 J |
| METALS | CALCIUM | MG/KG | 543 J | 833 J | 3610 J | 12800 J | 6560 J | 5130 J | 2480 | 7900 J | 2350 J | 344 J | 398 J | 552 J | 7140 J | 6010 J | 5450 J | 1760 J | 1960 J | 8830 J | 9720 J | 9080 J |
| METALS | CHROMIUM | MG/KG | 46.2 | 98.7 | 114 J | 59.1 J | 147 J | 26.5 J | 90.2 | 145 J | 145 J | 13.3 | 14 | 11.1 | 63.7 J | 40.6 J | 57.9 J | 14.6 | 16.5 | 33.4 J | 30.5 J | 52.9 J |
| METALS | COBALT | MG/KG | 1.2 J | 1.7 J | 4.3 J | 3.2 J | 2 J | 1.7 J | 1.9 J | 4.3 J | 7.4 J | 0.94 J | 0.95 J | 0.89 J | 3.4 J | 2.5 J | 1.5 J | 0.98 J | 0.72 J | 2.8 J | 5.8 J | 7.8 J |
| METALS | COPPER | MG/KG | 11.1 | 17.6 | 64 J | 18.4 J | 34.5 J | 15.3 J | 31.8 | 55.5 J | 55.9 J | 11.3 J | 10.5 J | 61.4 J | 22.6 J | 29.8 J | 30.6 J | 17.9 J | 6.6 J | 119 J | 130 J | 179 J |
| METALS | CYANIDE | MG/KG | 1.9 J | 4.8 J | 1.4 UJ | 2.2 UJ | 7 J | 1.3 UJ | 2.8 | 1.8 UJ | 1.7 J | 0.66 U | 0.6 U | 0.48 U | 1.6 UJ | 1.4 UJ | 1.2 UJ | 1.1 | 0.94 U | 2.1 UJ | 4 J | 3.4 J |
| METALS | IRON | MG/KG | 3710 | 5690 | 8080 J | 7950 J | 6110 J | 3420 J | 6960 | 8440 J | 9880 J | 4390 | 3710 | 3960 | 8010 J | 8350 J | 5900 J | 7580 | 8530 | 17000 J | 23700 J | 35700 J |
| METALS | LEAD | MG/KG | 476 | 1340 | 1340 J | 539 J | 3190 J | 266 J | 932 | 1920 J | 2830 J | 131 | 112 | 73.8 | 612 J | 421 J | 820 J | 50.4 | 47.7 | 220 J | 177 J | 224 J |
| METALS | MAGNESIUM | MG/KG | 90.1 J | 138 J | 216 J | 353 J | 162 J | 114 J | 129 J | 407 J | 468 J | 143 J | 149 J | 146 J | 469 J | 254 J | 245 J | 493 J | 539 J | 976 J | 892 J | 1220 J |
| METALS | MANGANESE | MG/KG | 25.3 | 27.4 | 71.7 J | 61.1 J | 33.8 J | 26.5 J | 51.1 | 59.7 J | 19.9 J | 8.9 | 9.3 | 14.7 | 55.9 J | 26.4 J | 13.4 J | 12.5 J | 9.1 J | 65.1 J | 157 J | 209 J |
| METALS | MERCURY | MG/KG | 0.059 U | 0.067 J | 0.24 J | 0.22 UJ | 0.23 UJ | 0.15 J | 0.064 | 0.15 UJ | 0.11 UJ | 0.055 U | 0.044 U | 0.046 U | 0.12 UJ | 0.25 J | 0.2 J | 0.07 U | 0.075 U | 0.55 J | 0.36 J | 0.73 J |
| METALS | NICKEL | MG/KG | 2 J | 2.9 J | 6.8 J | 6.6 J | 6 J | 4 J | 2.8 J | 9.1 J | 549 J | 3.3 J | 3.6 J | 1.2 J | 7 J | 5.6 J | 5 J | 2.7 J | 2.8 J | 12.5 J | 16.2 J | 23.4 J |
| METALS | POTASSIUM | MG/KG | 81 J | 128 J | 194 UJ | 302 UJ | 308 UJ | 191 UJ | 118 U | 292 J | 534 J | 224 J | 225 J | 226 J | 246 J | 340 J | 327 J | 601 J | 584 J | 646 J | 501 J | 541 J |
| METALS | SELENIUM | MG/KG | 0.79 U | 0.78 U | 2 UJ | 3.1 UJ | 3.2 UJ | 2 UJ | 1.2 UJ | 2.6 UJ | 2 J | 0.81 U | 0.76 U | 0.71 U | 3.2 J | 1.8 UJ | 2 J | 2.6 | 1.4 UJ | 3.5 J | 4.6 J | 4.4 UJ |
| METALS | SILVER | MG/KG | 0.24 U | 0.24 U | 0.84 UJ | 1.3 UJ | 1.3 UJ | 0.83 UJ | 0.51 U | 1.1 UJ | 0.7 J | 0.25 U | 0.23 U | 0.22 U | 0.59 UJ | 0.94 UJ | 0.83 UJ | 0.32 J | 0.34 U | 1.7 J | 1.3 UJ | 2.5 J |
| METALS | SODIUM | MG/KG | 63.7 U | 63 U | 237 J | 362 UJ | 370 UJ | 230 UJ | 142 U | 302 UJ | 381 J | 115 U | 108 U | 102 U | 275 UJ | 262 UJ | 231 UJ | 75.4 U | 90.4 U | 205 UJ | 340 UJ | 288 UJ |
| METALS | THALLIUM | MG/KG | 1.6 U | 1.6 U | 2.2 UJ | 3.4 UJ | 3.5 UJ | 2.2 UJ | 1.4 U | 2.9 UJ | 3.5 UJ | 1.6 U | 1.5 U | 1.4 U | 3.9 UJ | 3.1 J | 2.2 UJ | 1.9 U | 1.5 U | 5.1 UJ | 8.4 UJ | 4.8 UJ |
| METALS | VANADIUM | MG/KG | 3.9 J | 6.5 J | 8.4 J | 20.7 J | 10.9 J | 6 J | 5 J | 17.7 J | 14.4 J | 5 J | 5 J | 4.7 J | 13.9 J | 13.3 J | 13.2 J | 12.2 | 12.3 J | 35.9 J | 38.1 J | 46.8 J |
| METALS | ZINC | MG/KG | R | R | 193 J | 74.8 J | 117 J | 57.3 J | 108 | 119 J | 750 J | 39.6 J | 51.4 J | 32.8 J | 134 J | 164 J | 109 J | 48.4 | 42.7 | 295 J | 574 J | 602 J |
| PEST/PCB | 4,4'-DDD | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDT | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1016 | MG/KG | 0.11 U | 0.022 U | 0.049 UJ | 0.072 UJ | 0.076 UJ | 0.046 UJ | 0.029 U | 0.062 UJ | 0.048 UJ | 0.022 U | 0.02 U | 0.021 U | 0.057 UJ | 0.051 UJ | 0.044 UJ | 0.026 U | 0.031 U | 0.072 UJ | 0.12 UJ | 0.1 UJ |
| PEST/PCB | AROCLOR-1221 | MG/KG | 0.11 U | 0.022 U | 0.049 UJ | 0.072 UJ | 0.076 UJ | 0.046 UJ | 0.029 U | 0.062 UJ | 0.048 UJ | 0.022 U | 0.02 U | 0.021 U | 0.057 UJ | 0.051 UJ | 0.044 UJ | 0.026 U | 0.031 U | 0.072 UJ | 0.12 UJ | 0.1 UJ |
| PEST/PCB | AROCLOR-1232 | MG/KG | 0.11 U | 0.022 U | 0.049 UJ | 0.072 UJ | 0.076 UJ | 0.046 UJ | 0.029 U | 0.062 UJ | 0.048 UJ | 0.022 U | 0.02 U | 0.021 U | 0.057 UJ | 0.051 UJ | 0.044 UJ | 0.026 U | 0.031 U | 0.072 UJ | 0.12 UJ | 0.1 UJ |
| PEST/PCB | AROCLOR-1242 | MG/KG | 0.11 U | 0.022 U | 0.049 UJ | 0.072 UJ | 0.076 UJ | 0.046 UJ | 0.029 U | 0.062 UJ | 0.048 UJ | 0.022 U | 0.02 U | 0.021 U | 0.057 UJ | 0.051 UJ | 0.044 UJ | 0.026 U | 0.031 U | 0.072 UJ | 0.12 UJ | 0.1 UJ |
| PEST/PCB | AROCLOR-1248 | MG/KG | 0.11 U | 0.022 U | 0.049 UJ | 0.072 UJ | 0.076 UJ | 0.046 UJ | 0.029 U | 0.062 UJ | 0.048 UJ | 0.022 U | 0.02 U | 0.021 U | 0.057 UJ | 0.051 UJ | 0.044 UJ | 0.026 U | 0.031 U | 0.072 UJ | 0.12 UJ | 0.1 UJ |
| PEST/PCB | AROCLOR-1254 | MG/KG | 0.74 | 0.12 | 0.049 UJ | 0.072 UJ | 0.076 UJ | 0.046 UJ | 0.029 U | 0.062 UJ | 0.048 UJ | 0.035 J | 0.032 | 0.024 | 0.057 UJ | 0.051 UJ | 0.044 UJ | 0.026 U | 0.031 U | 0.39 J | 0.57 J | 0.72 J |
| PEST/PCB | AROCLOR-1260 | MG/KG | 0.11 U | 0.027 | 0.049 UJ | 0.072 UJ | 0.076 UJ | 0.046 UJ | 0.029 U | 0.062 UJ | 0.048 UJ | 0.022 U | 0.02 U | 0.021 U | 0.057 UJ | 0.051 UJ | 0.044 UJ | 0.026 U | 0.031 U | 0.11 J | 0.15 J | 0.21 J |
| PEST/PCB | AROCLOR-1262 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1268 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | BETA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DELTA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DIELDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN I | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN II | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | METHOXYCHLOR | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | TOXAPHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 1,1'-BIPHENYL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 1,2,4,5-TETRACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,3,4,6-TETRACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | ACENAPHTHENE | MG/KG | 0.074 J | 0.038 J | 0.97 UJ | 1.4 UJ | 1.5 UJ | 0.92 UJ | 0.029 J | 1.2 UJ | 0.94 UJ | 0.16 J | 0.21 J | 0.35 J | 1.1 UJ | 1 UJ | 0.87 UJ | 0.52 U | 0.62 U | 1.4 UJ | 2.4 UJ | 2.1 UJ |
| SVOC | ACENAPHTHYLENE | MG/KG | 0.45 U | 0.43 U | 0.97 UJ | 1.4 UJ | 1.5 UJ | 0.92 UJ | 0.57 U | 1.2 UJ | 0.94 UJ | 0.43 U | 0.4 U | 0.41 U | 1.1 UJ | 1 UJ | 0.87 UJ | 0.52 U | 0.62 U | 1.4 UJ | 2.4 UJ | 2.1 UJ |
| SVOC | ACETOPHENONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | ANTHRACENE | MG/KG | 0.16 J | 0.06 J | 0.07 J | 1.4 UJ | 1.5 UJ | 0.92 UJ | 0.059 J | 1.2 UJ | 0.94 UJ | 0.27 J | 0.39 J | 0.74 | 0.071 J | 1 UJ | 0.87 UJ | 0.52 U | 0.62 U | 1.4 UJ | 2.4 UJ | 2.1 UJ |
| SVOC | ATRAZINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.78 | 0.34 J | 0.48 J | 1.4 UJ | 1.5 UJ | 0.92 UJ | 0.26 J | 1.2 UJ | 0.085 J | 0.81 | 0.95 | 2.1 | 0.36 J | 0.21 J | 0.091 J | 0.038 J | 0.048 J | 0.25 J | 0.28 J | 0.31 J |
| SVOC | BENZO(A)PYRENE | MG/KG | 0.63 | 0.3 J | 0.43 J | 1.4 UJ | 1.5 UJ | 0.92 UJ | 0.24 J | 1.2 UJ | 0.097 J | 0.81 | 0.9 J | 1.9 | 0.34 J | 0.24 J | 0.11 J | 0.042 J | 0.057 J | 0.33 J | 0.35 J | 0.4 J |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 0.72 | 0.34 J | 0.42 J | 1.4 UJ | 1.5 UJ | 0.92 UJ | 0.31 J | 1.2 UJ | 0.11 J | 0.72 | 0.99 J | 2.1 | 0.46 J | 0.36 J | 0.12 J | 0.042 J | 0.063 J | 0.41 J | 0.56 J | 0.51 J |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.33 J | 0.18 J | 0.18 J | 1.4 UJ | 1.5 UJ | 0.92 UJ | 0.14 J | 1.2 UJ | 0.066 J | 0.47 | 0.44 J | 0.89 | 0.18 J | 0.19 J | 0.086 J | 0.027 J | 0.033 J | 0.29 J | 0.4 J | 0.33 J |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.67 | 0.34 J | 0.6 J | 1.4 UJ | 1.5 UJ | 0.92 UJ | 0.22 J | 1.2 UJ | 0.15 J | 0.94 | 1 J | 2 | 0.35 J | 0.29 J | 0.16 J | 0.062 J | 0.081 J | 0.44 J | 0.56 J | 0.65 J |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCDD0097 | HCDD0098 | HCDD0101 | HCDD0102 | HCDD0103 | HCDD0104 | HCDD0107 | HCDD0108 | HCDD0109 | HCDD0110 | HCDD0110 | HCDD0112 | HCDD0113 | HCDD0114 | HCDD0115 | HCDD0116 | HCDD0116 | HCDD0117 | HCDD0118 | HCDD0119 |
| | | Field Sample ID | HCDD0097-SD-AA-AB-0 | HCDD0098-SD-AA-AB-0 | HCDD0101-SD-AA-AB-0 | HCDD0102-SD-AA-AB-0 | HCDD0103-SD-AA-AB-0 | HCDD0104-SD-AA-AB-0 | HCDD0107-SD-AA-AB-0 | HCDD0108-SD-AA-AB-0 | HCDD0109-SD-AA-AB-0 | HCDD0110-SD-AA-AB-0 | HCDD0110-SD-AA-AB-1 | HCDD0112-SD-AA-AB-0 | HCDD0113-SD-AA-AB-0 | HCDD0114-SD-AA-AB-0 | HCDD0115-SD-AA-AB-0 | HCDD0116-SD-AA-AB-0 | HCDD0116-SD-AA-AB-1 | HCDD0117-SD-AA-AB-0 | HCDD0118-SD-AA-AB-0 | HCDD0119-SD-AA-AB-0 |
| | | Sample Date | 8/7/06 | 8/7/06 | 8/16/06 | 8/16/06 | 8/16/06 | 8/16/06 | 8/23/06 | 8/23/06 | 8/29/06 | 8/29/06 | 8/29/06 | 8/29/06 | 8/29/06 | 8/30/06 | 8/30/06 | 8/31/06 | 8/31/06 | 8/31/06 | 8/31/06 | 8/31/06 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | CAPROLACTAM | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | CARBAZOLE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | CHRYSENE | MG/KG | 0.96 | 0.45 | 0.54 J | 1.4 UJ | 1.5 UJ | 0.042 J | 0.33 J | 0.057 J | 0.13 J | 0.91 | 1 | 2.2 | 0.44 J | 0.33 J | 0.15 J | 0.054 J | 0.063 J | 0.44 J | 0.56 J | 0.56 J |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.1 J | 0.43 U | 0.11 J | 1.4 UJ | 1.5 UJ | 0.92 UJ | 0.067 J | 1.2 UJ | 0.94 UJ | 0.18 J | 0.15 J | 0.39 J | 1.1 UJ | 0.073 J | 0.87 UJ | 0.52 U | 0.62 UJ | 0.13 J | 2.4 UJ | 0.18 J |
| SVOC | DIBENZOFURAN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIMETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | FLUORANTHENE | MG/KG | 1.3 | 0.57 | 1 J | 0.085 J | 1.5 UJ | 0.92 UJ | 0.62 | 0.087 J | 0.21 J | 1.6 | 1.6 | 4 | 0.62 J | 0.4 J | 0.21 J | 0.072 J | 0.1 J | 0.49 J | 0.63 J | 0.88 J |
| SVOC | FLUORENE | MG/KG | 0.058 J | 0.033 J | 0.97 UJ | 1.4 UJ | 1.5 UJ | 0.92 UJ | 0.03 J | 1.2 UJ | 0.94 UJ | 0.28 J | 0.31 J | 0.4 J | 0.067 J | 1 UJ | 0.87 UJ | 0.52 U | 0.62 U | 1.4 UJ | 2.4 UJ | 2.1 UJ |
| SVOC | HEXACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.32 J | 0.16 J | 0.2 J | 1.4 UJ | 1.5 UJ | 0.92 UJ | 0.14 J | 1.2 UJ | 0.068 J | 0.46 | 0.46 J | 0.92 | 0.18 J | 0.15 J | 0.072 J | 0.031 J | 0.031 J | 0.25 J | 0.28 J | 0.33 J |
| SVOC | ISOPHORONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | NAPHTHALENE | MG/KG | 0.45 U | 0.43 U | 0.97 UJ | 1.4 UJ | 1.5 UJ | 0.92 UJ | 0.57 U | 1.2 UJ | 0.94 UJ | 0.029 J | 0.023 J | 0.41 U | 1.1 UJ | 1 UJ | 0.87 UJ | 0.52 U | 0.62 U | 1.4 UJ | 2.4 UJ | 2.1 UJ |
| SVOC | NITROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PENTACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PHENANTHRENE | MG/KG | 0.8 | 0.42 J | 0.32 J | 1.4 UJ | 1.5 UJ | 0.92 UJ | 0.28 J | 1.2 UJ | 0.1 J | 1.4 | 1.4 | 2.4 | 0.46 J | 0.27 J | 0.14 J | 0.043 J | 0.056 J | 0.33 J | 0.39 J | 0.45 J |
| SVOC | PHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PYRENE | MG/KG | 2.3 | 0.96 | 1.4 J | 0.093 J | 1.5 UJ | 0.92 UJ | 0.62 | 0.087 J | 0.24 J | 1.6 | 1.8 | 4.8 J | 0.71 J | 0.53 J | 0.34 J | 0.095 J | 0.13 J | 0.74 J | 0.94 J | 1.2 J |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,3-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMOETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,4-DIOXANE (P-DIOXANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | ACETONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOFORM | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON DISULFIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON TETRACHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROFORM | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | ETHYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | ISOPROPYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ACETATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ETHYL KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYLCYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | STYRENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TETRACHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | VINYL CHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENE, O- | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES, M & P | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | | | | | | | | | | | | | | | | | | | | |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCDD0120 | HCDD0121 | HCDD0122 | HCDD0123 | HCDD0124 | HCDD0125 | HCDD0126 | HCDD0127 | HCDD0127 | HCDD0128 | HCDD0129 | HCDD0130 | HCDD0130 | HCDD0131 | HCDD0132 | HCDD0133 | HCDD0134 | HCDD0135 | HCDD0136 | HCDD0137 |
| | | Field Sample ID | HCDD0120-SD-AA-AB-0 | HCDD0121-SD-AA-AB-0 | HCDD0122-SD-AA-AB-0 | HCDD0123-SD-AA-AB-0 | HCDD0124-SD-AA-AB-0 | HCDD0125-SD-AA-AB-0 | HCDD0126-SD-AA-AB-0 | HCDD0127-SD-AA-AB-0 | HCDD0127-SD-AA-AB-1 | HCDD0128-SD-AA-AB-0 | HCDD0129-SD-AA-AB-0 | HCDD0130-SD-AA-AB-0 | HCDD0130-SD-AA-AB-1 | HCDD0131-SD-AA-AB-0 | HCDD0132-SD-AA-AB-0 | HCDD0133-SD-AA-AB-0 | HCDD0134-SD-AA-AB-0 | HCDD0135-SD-AA-AB-0 | HCDD0136-SD-AA-AB-0 | HCDD0137-SD-AA-AB-0 |
| | | Sample Date | 8/31/06 | 8/31/06 | 9/6/06 | 9/6/06 | 9/6/06 | 9/6/06 | 9/6/06 | 9/6/06 | 9/6/06 | 9/6/06 | 9/7/06 | 9/7/06 | 9/7/06 | 9/7/06 | 9/7/06 | 9/7/06 | 9/7/06 | 9/7/06 | 9/7/06 | 9/8/06 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 19900 J | 21400 J | 6930 J | 3450 J | 3320 J | 9920 J | 20600 J | 16000 J | 15000 J | 21400 J | 16000 J | 17600 J | 16500 J | 17700 J | 14200 J | 20300 J | 13700 J | 10300 J | 6580 J | 9650 J |
| METALS | ANTIMONY | MG/KG | 3.2 UJ | 4.5 UJ | 3.9 UJ | 2.7 UJ | 2.6 UJ | 5.4 UJ | 4.6 UJ | 6.2 UJ | 5.5 UJ | 6.7 UJ | 3.1 UJ | 3.3 UJ | 2.9 UJ | 4.4 J | 3.2 UJ | 3 UJ | 3.1 J | 2.1 UJ | 2.8 UJ | 6 UJ |
| METALS | ARSENIC | MG/KG | 36.6 J | 61.2 J | 8.6 J | 46.9 J | 11.5 J | 100 J | 324 J | 197 J | 171 J | 202 J | 370 J | 735 J | 578 J | 949 J | 622 J | 1200 J | 327 J | 129 J | 87.6 J | 92 J |
| METALS | BARIUM | MG/KG | 441 J | 506 J | 116 J | 189 J | 74.3 J | 230 J | 1360 J | 1010 J | 958 J | 1700 J | 2300 J | 1810 J | 1420 J | 1930 J | 1750 J | 1850 J | 1770 J | 902 J | 232 J | 362 J |
| METALS | BERYLLIUM | MG/KG | 1.2 J | 1.2 J | 0.67 J | 0.22 J | 0.26 J | 0.66 J | 1.1 J | 0.93 J | 0.87 J | 1 J | 1.2 J | 1.3 J | 1.1 J | 1.1 J | 1.1 J | 1.3 J | 1 J | 0.83 J | 0.41 J | 0.82 J |
| METALS | CADMIUM | MG/KG | 4.5 J | 6.5 J | 1.2 J | 1.4 J | 0.68 J | 2.3 J | 6.2 J | 6.6 J | 8.7 J | 8.6 J | 10.9 J | 10.3 J | 7.8 J | 9.4 J | 11.9 J | 7.1 J | 8.2 J | 3.2 J | 2.3 J | 2.7 J |
| METALS | CALCIUM | MG/KG | 6540 J | 10100 J | 6650 J | 1980 J | 2810 J | 9730 J | 6020 J | 7230 J | 6570 J | 9090 J | 11800 J | 10600 J | 8650 J | 11300 J | 6880 J | 7510 J | 4940 J | 3950 J | 2820 J | 5480 J |
| METALS | CHROMIUM | MG/KG | 53.2 J | 62.8 J | 17.3 J | 71.9 J | 12 J | 104 J | 460 J | 459 J | 477 J | 342 J | 1180 J | 1500 J | 1110 J | 1490 J | 920 J | 1140 J | 863 J | 340 J | 98.9 J | 108 J |
| METALS | COBALT | MG/KG | 7.7 J | 11 J | 2.4 J | 2.6 J | 0.98 J | 3.5 J | 6.9 J | 6.5 J | 5.5 J | 13.5 J | 4.4 J | 9.6 J | 6.6 J | 5.8 J | 6.5 J | 7.2 J | 6.9 J | 5.8 J | 4 J | 4.4 J |
| METALS | COPPER | MG/KG | 162 J | 166 J | 12.7 J | 40 J | 3.3 J | 19.3 J | 270 J | 193 J | 176 J | 387 J | 587 J | 633 J | 461 J | 780 J | 468 J | 755 J | 500 J | 174 J | 54.2 J | 91.9 J |
| METALS | CYANIDE | MG/KG | 4.1 J | 4.4 J | 1.7 UJ | 2.5 J | 1.1 UJ | 2.1 UJ | 19.9 J | 48.9 J | 42.3 J | 11.1 J | 85.9 J | 60.4 J | 38.5 J | 25.6 J | 51.1 J | 20.1 J | 28.2 J | 11.6 J | 2 J | 1.6 UJ |
| METALS | IRON | MG/KG | 44400 J | 46200 J | 6770 J | 6680 J | 4160 J | 8680 J | 32300 J | 30900 J | 26300 J | 39800 J | 18400 J | 24200 J | 22900 J | 20900 J | 23900 J | 27600 J | 24800 J | 28000 J | 14700 J | 16400 J |
| METALS | LEAD | MG/KG | 228 J | 378 J | 63.6 J | 747 J | 53.9 J | 1180 J | 4780 J | 4190 J | 4450 J | 3560 J | 18900 J | 19700 J | 15400 J | 28100 J | 14600 J | 15600 J | 10100 J | 3310 J | 924 J | 1220 J |
| METALS | MAGNESIUM | MG/KG | 1100 J | 1310 J | 221 J | 171 J | 136 J | 449 J | 959 J | 830 J | 767 J | 974 J | 743 J | 778 J | 911 J | 620 J | 758 J | 1050 J | 730 J | 698 J | 626 J | 690 J |
| METALS | MANGANESE | MG/KG | 281 J | 323 J | 41.5 J | 38.3 J | 40.1 J | 37.3 J | 103 J | 121 J | 101 J | 209 J | 51.6 J | 68.5 J | 65 J | 38.6 J | 58.9 J | 77.4 J | 85.3 J | 127 J | 105 J | 82 J |
| METALS | MERCURY | MG/KG | 0.79 J | 0.88 J | 0.11 UJ | 0.16 J | 0.097 UJ | 0.22 UJ | 1 J | 0.61 J | 0.67 J | 1.4 J | 0.64 J | 0.53 J | 0.75 J | 0.29 J | 0.81 J | 0.67 J | 0.86 J | 0.66 J | 0.2 J | 0.46 J |
| METALS | NICKEL | MG/KG | 21.7 J | 27.5 J | 6.1 J | 4.8 J | 2.5 J | 9 J | 18.8 J | 16 J | 14.3 J | 26.9 J | 21.9 J | 27.5 J | 20.8 J | 25.9 J | 20.7 J | 27.7 J | 21.4 J | 15.1 J | 7.7 J | 11.8 J |
| METALS | POTASSIUM | MG/KG | 521 J | 970 J | 232 UJ | 160 UJ | 156 UJ | 344 J | 717 J | 532 J | 499 J | 627 J | 628 J | 775 J | 1020 J | 628 J | 560 J | 775 J | 466 J | 337 J | 506 J | 464 J |
| METALS | SELENIUM | MG/KG | 4 UJ | 5.6 UJ | 2.4 UJ | 1.7 J | 1.6 UJ | 3.4 J | 3.7 J | 3.8 UJ | 3.9 J | 5.1 J | 3.9 UJ | 4 UJ | 3.6 UJ | 4.8 J | 4 UJ | 3.7 UJ | 2.9 UJ | 2.5 UJ | 1.9 J | 2.3 UJ |
| METALS | SILVER | MG/KG | 2 J | 1.4 UJ | 1 UJ | 0.69 UJ | 0.67 UJ | 1.4 UJ | 1.7 J | 1.6 UJ | 1.4 UJ | 3.4 J | 0.96 UJ | 1 UJ | 0.9 UJ | 1 UJ | 0.99 UJ | 0.92 UJ | 0.73 UJ | 0.64 UJ | 0.72 UJ | 0.72 UJ |
| METALS | SODIUM | MG/KG | 261 UJ | 366 UJ | 278 UJ | 192 UJ | 187 UJ | 383 UJ | 329 UJ | 445 UJ | 393 UJ | 477 UJ | 254 UJ | 266 UJ | 236 UJ | 274 UJ | 262 UJ | 243 UJ | 192 UJ | 167 UJ | 202 UJ | 231 UJ |
| METALS | THALLIUM | MG/KG | 4.4 UJ | 6.1 UJ | 2.7 UJ | 1.8 UJ | 1.8 UJ | 3.6 UJ | 3.1 UJ | 4.2 UJ | 3.7 UJ | 4.5 UJ | 6.8 J | 8.3 J | 5.8 UJ | 7.2 J | 6.5 J | 6 UJ | 4.7 UJ | 4.1 UJ | 1.9 UJ | 4.4 UJ |
| METALS | VANADIUM | MG/KG | 47 J | 48.8 J | 12.2 J | 7.3 J | 6.7 J | 17.8 J | 52.9 J | 40 J | 37.1 J | 77 J | 33.4 J | 38.5 J | 37.3 J | 37.8 J | 35.8 J | 44.3 J | 32.7 J | 28.7 J | 17.5 J | 27 J |
| METALS | ZINC | MG/KG | 578 J | 840 J | 58.4 J | 187 J | 22.7 J | 165 J | 702 J | 747 J | 852 J | 1340 J | R | R | R | R | R | R | R | R | 269 J | 280 J |
| PEST/PCB | 4,4'-DDD | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDT | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1016 | MG/KG | 0.093 UJ | 0.13 UJ | 0.056 UJ | 0.039 UJ | 0.039 UJ | 0.079 UJ | 0.067 UJ | 0.093 UJ | 0.076 UJ | 0.093 UJ | 0.088 UJ | 0.098 UJ | 0.083 UJ | 0.098 UJ | 0.098 UJ | 0.088 UJ | 0.067 UJ | 0.06 UJ | 0.041 UJ | 0.058 UJ |
| PEST/PCB | AROCLOR-1221 | MG/KG | 0.093 UJ | 0.13 UJ | 0.056 UJ | 0.039 UJ | 0.039 UJ | 0.079 UJ | 0.067 UJ | 0.093 UJ | 0.076 UJ | 0.093 UJ | 0.088 UJ | 0.098 UJ | 0.083 UJ | 0.098 UJ | 0.098 UJ | 0.088 UJ | 0.067 UJ | 0.06 UJ | 0.041 UJ | 0.058 UJ |
| PEST/PCB | AROCLOR-1232 | MG/KG | 0.093 UJ | 0.13 UJ | 0.056 UJ | 0.039 UJ | 0.039 UJ | 0.079 UJ | 0.067 UJ | 0.093 UJ | 0.076 UJ | 0.093 UJ | 0.088 UJ | 0.098 UJ | 0.083 UJ | 0.098 UJ | 0.098 UJ | 0.088 UJ | 0.067 UJ | 0.06 UJ | 0.041 UJ | 0.058 UJ |
| PEST/PCB | AROCLOR-1242 | MG/KG | 0.093 UJ | 0.13 UJ | 0.056 UJ | 0.039 UJ | 0.039 UJ | 0.079 UJ | 0.067 UJ | 0.093 UJ | 0.076 UJ | 0.093 UJ | 0.088 UJ | 0.098 UJ | 0.083 UJ | 0.098 UJ | 0.098 UJ | 0.088 UJ | 0.067 UJ | 0.06 UJ | 0.041 UJ | 0.058 UJ |
| PEST/PCB | AROCLOR-1248 | MG/KG | 0.093 UJ | 0.13 UJ | 0.056 UJ | 0.039 UJ | 0.039 UJ | 0.079 UJ | 0.067 UJ | 0.093 UJ | 0.076 UJ | 0.093 UJ | 0.088 UJ | 0.098 UJ | 0.083 UJ | 0.098 UJ | 0.098 UJ | 0.088 UJ | 0.067 UJ | 0.06 UJ | 0.041 UJ | 0.058 UJ |
| PEST/PCB | AROCLOR-1254 | MG/KG | 0.62 J | 0.53 J | 0.056 UJ | 0.088 J | 0.039 UJ | 0.079 UJ | 0.75 J | 0.38 J | 0.24 J | 1.3 J | 0.088 UJ | 0.098 UJ | 0.083 UJ | 0.098 UJ | 0.098 UJ | 0.12 J | 0.13 J | 0.13 J | 0.041 UJ | 0.086 J |
| PEST/PCB | AROCLOR-1260 | MG/KG | 0.18 J | 0.14 J | 0.056 UJ | 0.039 UJ | 0.039 UJ | 0.079 UJ | 0.2 J | 0.15 J | 0.1 J | 0.29 J | 0.088 UJ | 0.098 UJ | 0.083 UJ | 0.098 UJ | 0.098 UJ | 0.088 UJ | 0.09 J | 0.12 J | 0.041 UJ | 0.068 J |
| PEST/PCB | AROCLOR-1262 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1268 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | BETA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DELTA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DIELDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN I | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN II | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | METHOXYCHLOR | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | TOXAPHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 1,1'-BIPHENYL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 1,2,4,5-TETRACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,3,4,6-TETRACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | ACENAPHTHENE | MG/KG | 1.8 UJ | 2.5 UJ | 1.1 UJ | 0.047 J | 0.77 UJ | 1.6 UJ | 0.076 J | 0.09 J | 0.094 J | 0.099 J | 1.7 UJ | 1.9 UJ | 1.7 UJ | 1.9 UJ | 1.9 UJ | 1.7 UJ | 1.3 UJ | 0.056 J | 0.8 UJ | 1.1 UJ |
| SVOC | ACENAPHTHYLENE | MG/KG | 1.8 UJ | 2.5 UJ | 1.1 UJ | 0.77 UJ | 0.77 UJ | 1.6 UJ | 1.3 UJ | 1.8 UJ | 1.5 UJ | 1.8 UJ | 1.7 UJ | 1.9 UJ | 1.7 UJ | 1.9 UJ | 1.9 UJ | 1.7 UJ | 1.3 UJ | 1.2 UJ | 0.8 UJ | 1.1 UJ |
| SVOC | ACETOPHENONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | ANTHRACENE | MG/KG | 1.8 UJ | 2.5 UJ | 1.1 UJ | 0.042 J | 0.77 UJ | 1.6 UJ | 0.089 J | 0.089 J | 0.1 J | 0.089 J | 1.7 UJ | 1.9 UJ | 1.7 UJ | 1.9 UJ | 0.093 J | 0.091 J | 0.08 J | 0.087 J | 0.8 UJ | 1.1 UJ |
| SVOC | ATRAZINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.72 J | 0.58 J | 1.1 UJ | 0.22 J | 0.77 UJ | 1.6 UJ | 0.45 J | 0.45 J | 0.42 J | 0.66 J | 0.17 J | 0.19 J | 0.16 J | 0.25 J | 0.52 J | 0.45 J | 0.58 J | 0.54 J | 0.17 J | 0.26 J |
| SVOC | BENZO(A)PYRENE | MG/KG | 0.99 J | 0.76 J | 1.1 UJ | 0.22 J | 0.77 UJ | 1.6 UJ | 0.51 J | 0.57 J | 0.56 J | 0.78 J | 0.19 J | 0.2 J | 0.2 J | 0.26 J | 0.63 J | 0.53 J | 0.63 J | 0.67 J | 0.23 J | 0.33 J |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 1.6 J | 0.86 J | 1.1 UJ | 0.29 J | 0.77 UJ | 1.6 UJ | 0.61 J | 0.85 J | 0.73 J | 1.2 J | 0.24 J | 0.24 J | 0.25 J | 0.41 J | 0.91 J | 0.78 J | 0.74 J | 1.1 J | 0.43 J | 0.42 J |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.67 J | 0.5 J | 1.1 UJ | 0.11 J | 0.77 UJ | 1.6 UJ | 0.23 J | 0.31 J | 0.3 J | 0.22 J | 0.13 J | 0.13 J | 0.1 J | 0.16 J | 0.35 J | 0.28 J | 0.31 J | 0.48 J | 0.17 J | 0.21 J |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 1.4 J | 1.3 J | 1.1 UJ | 0.26 J | 0.77 UJ | 1.6 UJ | 0.78 J | 0.64 J | 0.69 J | 1 J | 0.37 J | 0.36 J | 0.25 J | 0.33 J | 0.8 J | 0.66 J | 1.1 J | 0.56 J | 0.34 J | 0.44 J |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCDD0120 | HCDD0121 | HCDD0122 | HCDD0123 | HCDD0124 | HCDD0125 | HCDD0126 | HCDD0127 | HCDD0127 | HCDD0128 | HCDD0129 | HCDD0130 | HCDD0130 | HCDD0131 | HCDD0132 | HCDD0133 | HCDD0134 | HCDD0135 | HCDD0136 | HCDD0137 |
| | | Field Sample ID | HCDD0120-SD-AA-AB-0 | HCDD0121-SD-AA-AB-0 | HCDD0122-SD-AA-AB-0 | HCDD0123-SD-AA-AB-0 | HCDD0124-SD-AA-AB-0 | HCDD0125-SD-AA-AB-0 | HCDD0126-SD-AA-AB-0 | HCDD0127-SD-AA-AB-0 | HCDD0127-SD-AA-AB-1 | HCDD0128-SD-AA-AB-0 | HCDD0129-SD-AA-AB-0 | HCDD0130-SD-AA-AB-0 | HCDD0130-SD-AA-AB-1 | HCDD0131-SD-AA-AB-0 | HCDD0132-SD-AA-AB-0 | HCDD0133-SD-AA-AB-0 | HCDD0134-SD-AA-AB-0 | HCDD0135-SD-AA-AB-0 | HCDD0136-SD-AA-AB-0 | HCDD0137-SD-AA-AB-0 |
| | | Sample Date | 8/31/06 | 8/31/06 | 9/6/06 | 9/6/06 | 9/6/06 | 9/6/06 | 9/6/06 | 9/6/06 | 9/6/06 | 9/6/06 | 9/7/06 | 9/7/06 | 9/7/06 | 9/7/06 | 9/7/06 | 9/7/06 | 9/7/06 | 9/7/06 | 9/7/06 | 9/8/06 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | CAPROLACTAM | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | CARBAZOLE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | CHRYSENE | MG/KG | 1.3 J | 1 J | 0.069 J | 0.33 J | 0.77 UJ | 1.6 UJ | 0.73 J | 0.77 J | 0.74 J | 1.1 J | 0.32 J | 0.34 J | 0.27 J | 0.39 J | 0.88 J | 0.79 J | 0.86 J | 0.83 J | 0.32 J | 0.44 J |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.17 J | 0.14 J | 1.1 UJ | 0.04 J | 0.77 UJ | 1.6 UJ | 0.077 J | 0.09 J | 0.075 J | 1.8 UJ | 1.7 UJ | 1.9 UJ | 1.7 UJ | 1.9 UJ | 1.9 UJ | 1.7 UJ | 0.13 J | 0.21 J | 0.053 J | 0.097 J |
| SVOC | DIBENZOFURAN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIMETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | FLUORANTHENE | MG/KG | 1.6 J | 1.5 J | 0.11 J | 0.55 J | 0.77 UJ | 1.6 UJ | 0.96 J | 1.2 J | 1.1 J | 1.2 J | 0.36 J | 0.49 J | 0.42 J | 0.63 J | 1.4 J | 1 J | 1.1 J | 1.2 J | 0.43 J | 0.58 J |
| SVOC | FLUORENE | MG/KG | 0.12 J | 0.12 J | 1.1 UJ | 0.055 J | 0.77 UJ | 1.6 UJ | 0.12 J | 0.13 J | 0.15 J | 0.19 J | 1.7 UJ | 1.9 UJ | 1.7 UJ | 1.9 UJ | 0.11 J | 0.093 J | 0.088 J | 0.073 J | 0.8 UJ | 1.1 UJ |
| SVOC | HEXACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.66 J | 0.47 J | 1.1 UJ | 0.14 J | 0.77 UJ | 1.6 UJ | 0.24 J | 0.3 J | 0.29 J | 0.29 J | 0.12 J | 0.12 J | 0.096 J | 0.14 J | 0.33 J | 0.29 J | 0.29 J | 0.43 J | 0.15 J | 0.2 J |
| SVOC | ISOPHORONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | NAPHTHALENE | MG/KG | 1.8 UJ | 2.5 UJ | 1.1 UJ | 0.77 UJ | 0.77 UJ | 1.6 UJ | 1.3 UJ | 1.8 UJ | 1.5 UJ | 1.8 UJ | 1.7 UJ | 1.9 UJ | 1.7 UJ | 1.9 UJ | 1.9 UJ | 1.7 UJ | 1.3 UJ | 1.2 UJ | 0.8 UJ | 1.1 UJ |
| SVOC | NITROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PENTACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PHENANTHRENE | MG/KG | 0.92 J | 0.83 J | 0.14 J | 0.33 J | 0.078 J | 0.16 J | 0.62 J | 0.7 J | 0.8 J | 0.85 J | 0.23 J | 0.32 J | 0.29 J | 0.39 J | 0.77 J | 0.64 J | 0.65 J | 0.67 J | 0.24 J | 0.31 J |
| SVOC | PHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PYRENE | MG/KG | 2.7 J | 2.3 J | 0.11 J | 0.74 J | 0.77 UJ | 1.6 UJ | 1.6 J | 1.6 J | 1.6 J | 2.2 J | 0.59 J | 0.64 J | 0.54 J | 0.84 J | 1.8 J | 1.5 J | 1.7 J | 1.7 J | 0.59 J | 0.94 J |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,3-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMOETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,4-DIOXANE (P-DIOXANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | ACETONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOFORM | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON DISULFIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON TETRACHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROFORM | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | ETHYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | ISOPROPYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ACETATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ETHYL KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYLCYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | STYRENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TETRACHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | VINYL CHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENE, O- | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES, M & P | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | | | | | | | | | | | | | | | | | | | | |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCDD0138 | HCDD0138 | HCDD0142 | HCDD0143 | HCDD0147 | HCDD0046 | HCDD0047 | HCDD0048 | HCDD0049 | HCDD0050 | HCDD0051 | KWDD0001 | KWDD0001 | KWDD0002 | KWDD0003 | KWDD0004 | KWDD0004 | KWDD0005 | KWDD0005 | KWDD0006 |
| | | Field Sample ID | HCDD0138-SD-AA-AB-0 | HCDD0138-SD-AA-AB-1 | HCDD0142-SD-AA-AB-0 | HCDD0143-SD-AA-AB-0 | HCDD0147-SD-AA-AB-0 | HCDD0046-SD-AA-AB-0 | HCDD0047-SD-AA-AB-0 | HCDD0048-SD-AA-AB-0 | HCDD0049-SD-AA-AB-0 | HCDD0050-SD-AA-AB-0 | HCDD0051-SD-AA-AB-0 | KWDD0001-SD-AA-AB-0 | KWDD0001-SD-AA-AB-0-A | KWDD0002-SD-AA-AB-0 | KWDD0003-SD-AA-AB-0 | KWDD0004-SD-AA-AB-0 | KWDD0004-SD-AA-AB-1 | KWDD0005-SD-AA-AB-0_A | KWDD0005-SD-AA-AB-0 | KWDD0006-SD-AA-AB-0 |
| | | Sample Date | 9/18/06 | 9/18/06 | 9/19/06 | 9/19/06 | 11/7/07 | 7/28/05 | 7/28/05 | 8/1/05 | 8/1/05 | 8/1/05 | 8/1/05 | 10/3/07 | 3/15/11 | 10/3/07 | 10/3/07 | 10/3/07 | 10/3/07 | 6/26/08 | 10/3/07 | 10/3/07 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 1120 | 1440 | 1440 | 737 | 1440 | 4530 J | 2550 J | 13300 J | 7210 J | 15100 J | 2410 | 6950 | 1210 | 5590 | 9340 | 46000 J | 42200 J | 34500 J | 42200 J | 31800 J |
| METALS | ANTIMONY | MG/KG | 1 U | 1.1 U | 1.1 UJ | 0.94 UJ | 0.76 UJ | 1.8 UJ | 2.1 UJ | 6.7 UJ | 6.4 UJ | 7.6 UJ | 1.7 U | 0.22 J | 0.94 J | 0.27 J | 0.17 UJ | 2.9 J | 2.7 J | 4.1 J | 2 J | 2.9 J |
| METALS | ARSENIC | MG/KG | 59.3 | 53.2 | 53.4 | 16 | 49.9 | 14.6 | 16 | 122 J | 225 J | 277 J | 2.3 J | 34.7 | 18.1 J | 4.6 | 20.6 | 147 J | 134 J | 132 J | 135 J | 101 J |
| METALS | BARIUM | MG/KG | 74.3 | 165 | 196 | 38.9 | 756 J | 42.9 J | 124 J | 1020 J | 278 J | 1110 J | 36 J | 18.4 J | 15.7 J | 15.3 J | 5.9 J | 1220 J | 1110 J | 1100 J | 1130 J | 745 J |
| METALS | BERYLLIUM | MG/KG | 0.06 J | 0.08 J | 0.09 J | 0.04 U | 0.08 J | 4.4 J | 0.26 J | 1.2 J | 0.66 J | 1.3 J | 0.15 J | 0.59 J | 0.094 J | 0.059 J | 0.56 J | 1.4 J | 1.3 J | 1.3 J | 1.3 J | 0.92 J |
| METALS | CADMIUM | MG/KG | 0.72 J | 0.49 J | 0.43 J | 0.43 J | 0.09 U | 0.8 J | 0.76 J | 8.4 J | 12.6 J | 11.2 J | 0.09 J | 0.51 J | 0.19 J | 0.017 U | 0.31 J | 9.8 J | 8.9 J | R | 10.1 J | 6.8 J |
| METALS | CALCIUM | MG/KG | 656 J | 499 J | 293 J | 266 J | 9430 J | 12100 J | 1450 J | 5830 J | 7050 J | 7600 J | 889 J | 1070 | 697 | 175 J | 297 J | 9430 J | 8720 J | 8700 J | 9440 J | 7050 J |
| METALS | CHROMIUM | MG/KG | 114 | 100 | 114 | 24.6 | 84.3 J | 34.1 J | 28.3 J | 658 J | 274 J | 696 J | 13.6 J | 203 J | 59.8 D | 16.9 J | 205 J | 229 J | 209 J | 191 J | 229 J | 162 J |
| METALS | COBALT | MG/KG | 0.71 J | 1.5 J | 1.1 J | 0.98 J | 1.3 J | 5.4 J | 2.1 J | 6.2 J | 4.8 J | 13.5 J | 0.79 U | 1.4 J | 0.59 J | 0.63 J | 1.2 J | 12.6 J | 11.9 J | 10.8 J | 13.7 J | 10.3 J |
| METALS | COPPER | MG/KG | 58.5 J | 20.1 J | 24.2 | 6.7 | 37.4 | 4.7 J | 27.7 J | 341 J | 183 J | 187 J | 10.4 J | 2.6 J | 6.6 | 18 J | 2.9 J | 409 J | 371 J | 363 J | 361 J | 237 J |
| METALS | CYANIDE | MG/KG | 3.8 J | 2.4 J | 10.9 | 2.7 | 7.1 | 0.65 UJ | 0.52 J | 42.6 J | 72.1 J | 71 J | 0.49 U | 0.66 U | 0.61 U | 0.55 U | 0.55 U | 3.2 UJ | 3.2 UJ | R | 3.7 UJ | 2.6 UJ |
| METALS | IRON | MG/KG | 2610 | 3960 | 3490 | 2190 | 5340 | 23000 J | 8270 J | 17400 J | 9370 J | 24500 J | 6490 | 45800 | 14000 | 10900 | 32500 | 50300 J | 46300 J | 39000 J | 52200 J | 42000 J |
| METALS | LEAD | MG/KG | 1300 | 863 | 914 | 235 | 887 | 10.8 | 222 J | 6720 J | 3150 J | 4450 J | 35.5 J | 7.1 | 34.2 J | 19.8 | 6.4 | 1720 J | 1560 J | 1550 J | 1640 J | 1170 J |
| METALS | MAGNESIUM | MG/KG | 66.2 J | 115 J | 84.3 J | 61.6 J | 5540 J | 988 J | 229 J | 952 J | 254 J | 733 J | 212 J | 2440 | 270 J | 114 J | 2300 | 2450 J | 2270 J | 1640 J | 2470 J | 1950 J |
| METALS | MANGANESE | MG/KG | 10.3 J | 16.3 J | 11.9 | 11.4 | 47.1 | 65.1 J | 22.7 J | 85.8 J | 60.3 J | 46.3 J | 14.6 | 43.7 | 23.1 | 18.1 | 6.3 | 258 J | 239 J | 242 J | 297 J | 212 J |
| METALS | MERCURY | MG/KG | 0.064 U | 0.051 U | 0.071 U | 0.035 U | 0.1 J | 0.058 U | 0.1 J | 0.91 J | 1.1 J | 0.63 J | 0.053 U | 0.057 U | 0.12 U | 0.055 U | 0.063 U | 0.85 J | 0.78 J | 0.87 J | 1 J | 0.64 J |
| METALS | NICKEL | MG/KG | 1.8 J | 1.7 J | 1.4 J | 1 J | 4.1 J | 23.2 J | 5.5 J | 17.5 J | 11.3 J | 18.1 J | 2.7 J | 2.9 J | 1.5 J | 1.5 J | 3.4 J | 41.3 J | 37.7 J | 37.2 J | 41.8 J | 30.9 J |
| METALS | POTASSIUM | MG/KG | 55 U | 127 J | 201 J | 256 J | 293 J | 2330 | 334 J | 843 UJ | 801 UJ | 952 UJ | 219 U | 5250 J | 537 J | 158 J | 4880 J | 2330 J | 2280 J | 1360 J | 2220 J | 1900 J |
| METALS | SELENIUM | MG/KG | 0.93 U | 0.97 U | 0.96 U | 0.8 U | 1 U | 2.4 | 1.3 UJ | 4.2 UJ | 4 UJ | 4.8 UJ | 1.1 UJ | 1.3 | 4.3 U | 0.12 U | 1.8 | 3.6 J | 2.4 J | 2.1 UJ | 1.5 J | 2.5 J |
| METALS | SILVER | MG/KG | 0.41 U | 0.42 U | 0.45 U | 0.37 U | 0.21 U | 0.5 U | 4.4 J | 1.9 UJ | 1.8 UJ | 2.1 UJ | 0.49 U | 0.06 U | 1.2 U | 0.05 U | 0.058 U | 3 J | 2.4 J | R | 2.5 J | 1.4 J |
| METALS | SODIUM | MG/KG | 86.8 U | 89.9 U | 64.6 U | 73.5 J | 204 J | 159 U | 188 U | 573 UJ | 544 UJ | 647 UJ | 149 U | 50 J | 39.4 J | 19 J | 172 J | 424 J | 391 J | 407 J | 411 J | 306 J |
| METALS | THALLIUM | MG/KG | 1.2 U | 1.2 U | 1.8 U | 1.5 U | 1.2 U | 1.4 U | 1.7 U | 9.8 J | 7.2 UJ | 8.6 UJ | 2 U | 0.55 J | 3.1 U | 0.15 U | 0.43 J | 0.97 UJ | 0.92 UJ | 2.6 J | 1.1 UJ | 0.83 UJ |
| METALS | VANADIUM | MG/KG | 3.5 J | 4.6 J | 3.8 J | 3.1 J | 6 J | 13.5 J | 7.9 J | 27.3 J | 14.8 J | 37.9 J | 7.1 J | 106 | 25.9 | 17.4 | 72.8 | 61.1 J | 55.7 J | 44.1 J | 58.2 J | 49.6 J |
| METALS | ZINC | MG/KG | 68 J | 116 J | 83 | 47.1 | 71.7 | 124 J | 102 J | 936 J | 495 J | 1060 J | 28 J | 18.7 | 30.6 | 7.5 | 24.9 | 1390 J | 1270 J | 1250 J | 1410 J | 1000 J |
| PEST/PCB | 4,4'-DDD | MG/KG | | | | | | 0.0044 U | 0.013 | 0.026 J | 0.02 J | 0.031 J | 0.0074 | | | | | | | | | |
| PEST/PCB | 4,4'-DDE | MG/KG | | | | | | 0.0044 U | 0.013 | 0.029 J | 0.05 J | 0.071 J | 0.011 | | | | | | | | | |
| PEST/PCB | 4,4'-DDT | MG/KG | | | | | | 0.0044 U | 0.0047 U | 0.016 UJ | 0.016 UJ | 0.0089 J | 0.004 U | | | | | | | | | |
| PEST/PCB | ALDRIN | MG/KG | | | | | | 0.0023 U | 0.0024 U | 0.0081 UJ | 0.0081 UJ | 0.0089 UJ | 0.0021 U | | | | | | | | | |
| PEST/PCB | ALPHA-BHC | MG/KG | | | | | | 0.0023 U | 0.0024 U | 0.0081 UJ | 0.0081 UJ | 0.0089 UJ | 0.0021 U | | | | | | | | | |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | | | | | | 0.0023 U | 0.0022 J | 0.0055 J | 0.0081 UJ | 0.0089 UJ | 0.0012 J | | | | | | | | | |
| PEST/PCB | AROCLOR-1016 | MG/KG | 0.022 U | 0.022 U | 0.023 U | 0.02 U | 0.039 U | 0.044 U | 0.047 U | 0.16 UJ | 0.16 UJ | 0.17 UJ | 0.04 U | 0.023 U | | 0.019 U | 0.022 U | 0.13 UJ | 0.12 UJ | | 0.14 UJ | 0.1 UJ |
| PEST/PCB | AROCLOR-1221 | MG/KG | 0.022 U | 0.022 U | 0.023 U | 0.02 U | 0.039 U | 0.089 U | 0.094 U | 0.32 UJ | 0.32 UJ | 0.35 UJ | 0.082 U | 0.023 U | | 0.019 U | 0.022 U | 0.13 UJ | 0.12 UJ | | 0.14 UJ | 0.1 UJ |
| PEST/PCB | AROCLOR-1232 | MG/KG | 0.022 U | 0.022 U | 0.023 U | 0.02 U | 0.039 U | 0.044 U | 0.047 U | 0.16 UJ | 0.16 UJ | 0.17 UJ | 0.04 U | 0.023 U | | 0.019 U | 0.022 U | 0.13 UJ | 0.12 UJ | | 0.14 UJ | 0.1 UJ |
| PEST/PCB | AROCLOR-1242 | MG/KG | 0.022 U | 0.022 U | 0.023 U | 0.02 U | 0.039 U | 0.044 U | 0.047 U | 0.16 UJ | 0.16 UJ | 0.17 UJ | 0.04 U | 0.023 U | | 0.019 U | 0.022 U | 0.13 UJ | 0.12 UJ | | 0.14 UJ | 0.1 UJ |
| PEST/PCB | AROCLOR-1248 | MG/KG | 0.022 U | 0.022 U | 0.023 U | 0.02 U | 0.039 U | 0.044 U | 0.047 U | 0.16 UJ | 0.16 UJ | 0.17 UJ | 0.04 U | 0.023 U | | 0.019 U | 0.022 U | 0.13 UJ | 0.12 UJ | | 0.14 UJ | 0.1 UJ |
| PEST/PCB | AROCLOR-1254 | MG/KG | 0.022 U | 0.022 U | 0.023 U | 0.02 U | 0.039 U | 0.044 U | 0.047 U | 0.16 UJ | 0.16 UJ | 0.17 UJ | 0.04 U | 0.023 U | | 0.019 U | 0.022 U | 0.19 J | 0.17 J | | 0.2 J | 0.17 J |
| PEST/PCB | AROCLOR-1260 | MG/KG | 0.022 U | 0.022 U | 0.023 U | 0.02 U | 0.039 U | 0.044 U | 0.047 U | 0.16 UJ | 0.16 UJ | 0.17 UJ | 0.04 U | 0.023 U | | 0.019 U | 0.022 U | 0.13 UJ | 0.12 UJ | | 0.14 UJ | 0.1 UJ |
| PEST/PCB | AROCLOR-1262 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1268 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | BETA-BHC | MG/KG | | | | | | 0.0023 U | 0.0055 J | 0.0081 UJ | 0.0081 UJ | 0.011 J | 0.0021 U | | | | | | | | | |
| PEST/PCB | DELTA-BHC | MG/KG | | | | | | 0.0023 U | 0.0024 U | 0.0081 UJ | 0.0081 UJ | 0.0089 UJ | 0.0021 U | | | | | | | | | |
| PEST/PCB | DIELDRIN | MG/KG | | | | | | 0.0044 U | 0.0047 U | 0.016 UJ | 0.016 UJ | 0.017 UJ | 0.004 U | | | | | | | | | |
| PEST/PCB | ENDOSULFAN I | MG/KG | | | | | | 0.0023 U | 0.0024 U | 0.0081 UJ | 0.0081 UJ | 0.0089 UJ | 0.0021 U | | | | | | | | | |
| PEST/PCB | ENDOSULFAN II | MG/KG | | | | | | 0.0044 U | 0.0047 U | 0.016 UJ | 0.016 UJ | 0.017 UJ | 0.004 U | | | | | | | | | |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | | | | | | 0.0044 U | 0.0047 U | 0.016 UJ | 0.016 UJ | 0.017 UJ | 0.004 U | | | | | | | | | |
| PEST/PCB | ENDRIN | MG/KG | | | | | | 0.0044 U | 0.0047 U | 0.016 UJ | 0.016 UJ | 0.017 UJ | 0.004 U | | | | | | | | | |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | | | | | | 0.0044 U | 0.0047 U | 0.016 UJ | 0.016 UJ | 0.017 UJ | 0.004 U | | | | | | | | | |
| PEST/PCB | ENDRIN KETONE | MG/KG | | | | | | 0.0044 U | 0.0047 U | 0.016 UJ | 0.016 UJ | 0.017 UJ | 0.004 U | | | | | | | | | |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | | | | | | 0.0023 U | 0.0024 U | 0.0081 UJ | 0.0081 UJ | 0.0089 UJ | 0.0021 U | | | | | | | | | |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | | | | | | 0.0023 U | 0.0018 J | 0.0081 UJ | 0.0043 J | 0.0089 UJ | 0.0021 U | | | | | | | | | |
| PEST/PCB | HEPTACHLOR | MG/KG | | | | | | 0.0023 U | 0.0024 U | 0.0081 UJ | 0.0081 UJ | 0.0089 UJ | 0.0021 U | | | | | | | | | |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | | | | | | 0.0023 U | 0.0022 J | 0.0081 UJ | 0.0081 UJ | 0.0089 UJ | 0.0021 U | | | | | | | | | |
| PEST/PCB | METHOXYCHLOR | MG/KG | | | | | | 0.023 U | 0.024 U | 0.081 UJ | 0.081 UJ | 0.089 UJ | 0.021 U | | | | | | | | | |
| PEST/PCB | TOXAPHENE | MG/KG | | | | | | 0.23 U | 0.24 U | 0.81 UJ | 0.81 UJ | 0.89 UJ | 0.21 U | | | | | | | | | |
| SVOC | 1,1'-BIPHENYL | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | 1,2,4,5-TETRACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | 2,3,4,6-TETRACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | | | | | | 1.1 UJ | 1.2 UJ | 3.9 UJ | 4 UJ | 4.4 UJ | 1 U | | | | | | | | | |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | 2,4-DINITROPHENOL | MG/KG | | | | | | 1.1 UJ | 1.2 UJ | 3.9 UJ | 4 UJ | 4.4 UJ | 1 U | | | | | | | | | |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | 2-CHLOROPHENOL | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | | | | | | 0.44 UJ | 0.05 J | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | 2-METHYLPHENOL | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | 2-NITROANILINE | MG/KG | | | | | | 1.1 UJ | 1.2 UJ | 3.9 UJ | 4 UJ | 4.4 UJ | 1 U | | | | | | | | | |
| SVOC | 2-NITROPHENOL | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | 3-NITROANILINE | MG/KG | | | | | | 1.1 UJ | 1.2 UJ | 3.9 UJ | 4 UJ | 4.4 UJ | 1 U | | | | | | | | | |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | | | | | | 1.1 UJ | 1.2 UJ | 3.9 UJ | 4 UJ | 4.4 UJ | 1 U | | | | | | | | | |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | 4-CHLOROANILINE | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | 4-METHYLPHENOL | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | 4-NITROANILINE | MG/KG | | | | | | 1.1 UJ | 1.2 UJ | 3.9 UJ | 4 UJ | 4.4 UJ | 1 U | | | | | | | | | |
| SVOC | 4-NITROPHENOL | MG/KG | | | | | | 1.1 UJ | 1.2 UJ | 3.9 UJ | 4 UJ | 4.4 UJ | 1 U | | | | | | | | | |
| SVOC | ACENAPHTHENE | MG/KG | 0.15 J | 0.09 J | 0.074 J | 0.14 J | 0.23 J | 0.44 UJ | 0.17 J | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | 0.45 U | | 0.38 U | 0.44 U | 2.5 UJ | 2.4 UJ | | 2.8 UJ | 2.1 UJ |
| SVOC | ACENAPHTHYLENE | MG/KG | 0.44 U | 0.44 U | 0.46 U | 0.4 U | 0.38 U | 0.44 UJ | 0.13 J | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | 0.45 U | | 0.38 U | 0.44 U | 2.5 UJ | 0.12 J | | 2.8 UJ | 2.1 UJ |
| SVOC | ACETOPHENONE | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | ANTHRACENE | MG/KG | 0.26 J | 0.17 J | 0.13 J | 0.64 | 0.29 J | 0.44 UJ | 0.4 J | 0.096 J | 1.6 UJ | 0.11 J | 0.022 J | 0.45 U | | 0.38 U | 0.44 U | 2.5 UJ | 0.14 J | | 0.13 J | 2.1 UJ |
| SVOC | ATRAZINE | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 UJ | | | | | | | | | |
| SVOC | BENZALDEHYDE | MG/KG | | | | | | 0.44 UJ | 0.19 J | 0.7 J | 1.1 J | 1.5 J | 0.4 UJ | | | | | | | | | |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.87 | 0.58 | 0.51 | 0.79 | 0.68 | 0.44 UJ | 1.2 J | 0.51 J | 0.24 J | 0.52 J | 0.088 J | 0.45 U | | 0.38 U | 0.44 U | 0.65 J | 0.69 J | | 0.65 J | 0.43 J |
| SVOC | BENZO(A)PYRENE | MG/KG | 0.76 | 0.58 J | 0.5 J | 0.74 J | 0.74 J | 0.44 UJ | 1.1 J | 0.53 J | 0.29 J | 0.62 J | 0.11 J | 0.45 U | | 0.38 U | 0.44 U | 0.8 J | 0.89 J | | 0.78 J | 0.5 J |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 0.84 | 0.52 J | 0.57 J | 0.79 J | 1 J | 0.44 UJ | 0.98 J | 0.81 J | 0.3 J | 0.78 J | 0.1 J | 0.45 U | | 0.38 U | 0.44 U | 0.94 J | 1.4 J | | 1.1 J | 0.53 J |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.41 J | 0.24 J | 0.22 J | 0.34 J | 0.086 J | 0.44 UJ | 0.34 J | 0.27 J | 1.6 UJ | 0.36 J | 0.073 J | 0.45 U | | 0.38 U | 0.44 U | 0.6 J | 0.33 J | | 0.37 J | 0.29 J |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.81 | 0.67 J | 0.51 J | 0.73 J | 1.2 J | 0.44 UJ | 0.84 J | 0.78 J | 0.42 J | 0.72 J | 0.11 J | 0.45 U | | 0.38 U | 0.44 U | 0.92 J | 1 J | | 0.89 J | 0.66 J |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCDD0138 | HCDD0138 | HCDD0142 | HCDD0143 | HCDD0147 | HCDD0046 | HCDD0047 | HCDD0048 | HCDD0049 | HCDD0050 | HCDD0051 | KWDD0001 | KWDD0001 | KWDD0002 | KWDD0003 | KWDD0004 | KWDD0004 | KWDD0005 | KWDD0005 | KWDD0006 |
| | | Field Sample ID | HCDD0138-SD-AA-AB-0 | HCDD0138-SD-AA-AB-1 | HCDD0142-SD-AA-AB-0 | HCDD0143-SD-AA-AB-0 | HCDD0147-SD-AA-AB-0 | HCDD0046-SD-AA-AB-0 | HCDD0047-SD-AA-AB-0 | HCDD0048-SD-AA-AB-0 | HCDD0049-SD-AA-AB-0 | HCDD0050-SD-AA-AB-0 | HCDD0051-SD-AA-AB-0 | KWDD0001-SD-AA-AB-0 | KWDD0001-SD-AA-AB-0-A | KWDD0002-SD-AA-AB-0 | KWDD0003-SD-AA-AB-0 | KWDD0004-SD-AA-AB-0 | KWDD0004-SD-AA-AB-1 | KWDD0005-SD-AA-AB-0_A | KWDD0005-SD-AA-AB-0 | KWDD0006-SD-AA-AB-0 |
| | | Sample Date | 9/18/06 | 9/18/06 | 9/19/06 | 9/19/06 | 11/7/07 | 7/28/05 | 7/28/05 | 8/1/05 | 8/1/05 | 8/1/05 | 8/1/05 | 10/3/07 | 3/15/11 | 10/3/07 | 10/3/07 | 10/3/07 | 10/3/07 | 6/26/08 | 10/3/07 | 10/3/07 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | | | | | | 0.43 J | 0.79 J | 0.81 J | 0.25 J | 0.6 J | 0.27 J | | | | | | | | | |
| SVOC | CAPROLACTAM | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | CARBAZOLE | MG/KG | | | | | | 0.44 UJ | 0.092 J | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | CHRYSENE | MG/KG | 0.99 | 0.7 | 0.69 | 1.2 | 0.69 | 0.021 J | 1.5 J | 0.54 J | 0.44 J | 0.88 J | 0.13 J | 0.45 U | | 0.38 U | 0.44 U | 1 J | 1.1 J | | 0.98 J | 0.69 J |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.14 J | 0.076 J | 0.071 J | 0.11 J | 0.12 J | 0.44 UJ | 0.13 J | 0.15 J | 1.6 UJ | 0.16 J | 0.4 UJ | 0.45 U | | 0.38 U | 0.44 U | 0.16 J | 2.4 UJ | | 2.8 UJ | 2.1 UJ |
| SVOC | DIBENZOFURAN | MG/KG | | | | | | 0.44 UJ | 0.07 J | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | DIETHYLPHTHALATE | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | DIMETHYLPHTHALATE | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | | | | | | 0.44 UJ | 0.059 J | 0.099 J | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 UJ | | | | | | | | | |
| SVOC | FLUORANTHENE | MG/KG | 1.9 | 1.2 | 1.2 | 1.7 | 1.5 | 0.056 J | 2.8 J | 0.89 J | 0.45 J | 1.4 J | 0.19 J | 0.45 U | | 0.38 U | 0.44 U | 1.5 J | 1.8 J | | 1.5 J | 1.1 J |
| SVOC | FLUORENE | MG/KG | 0.13 J | 0.076 J | 0.074 J | 0.13 J | 0.19 J | 0.44 UJ | 0.65 J | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | 0.45 U | | 0.38 U | 0.44 U | 2.5 UJ | 2.4 UJ | | 2.8 UJ | 2.1 UJ |
| SVOC | HEXACHLOROBENZENE | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 UJ | | | | | | | | | |
| SVOC | HEXACHLOROETHANE | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.41 J | 0.23 J | 0.22 J | 0.34 J | 0.24 J | 0.44 UJ | 0.3 J | 0.26 J | 1.6 UJ | 0.32 J | 0.05 J | 0.45 U | | 0.38 U | 0.44 U | 0.53 J | 0.35 J | | 0.41 J | 0.28 J |
| SVOC | ISOPHORONE | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | NAPHTHALENE | MG/KG | 0.44 U | 0.44 U | 0.46 U | 0.4 U | 0.096 J | 0.44 UJ | 0.065 J | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | 0.45 U | | 0.38 U | 0.44 U | 2.5 UJ | 2.4 UJ | | 2.8 UJ | 2.1 UJ |
| SVOC | NITROBENZENE | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | PENTACHLOROPHENOL | MG/KG | | | | | | 1.1 UJ | 1.2 UJ | 3.9 UJ | 4 UJ | 4.4 UJ | 1 U | | | | | | | | | |
| SVOC | PHENANTHRENE | MG/KG | 1 | 0.72 | 0.57 | 0.98 | 1.2 | 0.03 J | 3.3 J | 0.46 J | 0.26 J | 0.65 J | 0.098 J | 0.45 U | | 0.38 U | 0.44 U | 0.5 J | 0.53 J | | 0.49 J | 0.35 J |
| SVOC | PHENOL | MG/KG | | | | | | 0.44 UJ | 0.46 UJ | 1.6 UJ | 1.6 UJ | 1.7 UJ | 0.4 U | | | | | | | | | |
| SVOC | PYRENE | MG/KG | 2.1 | 1.8 | 1.6 | 2.4 | 1.4 | 0.064 J | 3.2 J | 1.2 J | 0.74 J | 1.6 J | 0.24 J | 0.45 U | | 0.38 U | 0.44 U | 1.4 J | 1.3 J | | 1.3 J | 0.8 J |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | 1,1-DICHLOROETHANE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | 1,1-DICHLOROETHENE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | 1,2,3-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | 1,2-DIBROMOETHANE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | 1,2-DICHLOROETHANE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | 1,4-DIOXANE (P-DIOXANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | ACETONE | MG/KG | | | | | | 0.004 J | 0.024 | 0.048 J | 0.16 J | 0.27 J | 0.016 | | | | | | | | | |
| VOC | BENZENE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | BROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | BROMOFORM | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | BROMOMETHANE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | CARBON DISULFIDE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.011 J | 0.009 U | | | | | | | | | |
| VOC | CARBON TETRACHLORIDE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | CHLOROBENZENE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | CHLOROETHANE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | CHLOROFORM | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | CHLOROMETHANE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | CYCLOHEXANE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 UJ | | | | | | | | | |
| VOC | DICHLOROMETHANE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | ETHYLBENZENE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | ISOPROPYLBENZENE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | METHYL ACETATE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | METHYL ETHYL KETONE | MG/KG | | | | | | 0.01 U | 0.01 J | 0.02 J | 0.064 J | 0.11 J | 0.006 J | | | | | | | | | |
| VOC | METHYLCYCLOHEXANE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | STYRENE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | TETRACHLOROETHENE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | TOLUENE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 UJ | | | | | | | | | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | VINYL CHLORIDE | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |
| VOC | XYLENE, O- | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES, M & P | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | | | | | | 0.01 U | 0.013 U | 0.071 UJ | 0.079 UJ | 0.086 UJ | 0.009 U | | | | | | | | | |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | KWDD0006 | KWDD0007 | KWDD0010 | KWDD0011 | KWDD0011 | KWDD0012 | KWDD0013 | KWDD0014 | KWDD0015 | KWDD0015 | KWDD0016 | KWDD0017 | KWDD0018 | KWDD0018 | KWDD0019 | KWDD0020 | KWDD0021 | KWDD0021 | KWDD0022 |
| | | Field Sample ID | KWDD0006-SD-AA-AB-0-A | KWDD0007-SD-AA-AB-0 | KWDD0010-SD-AA-AB-0 | KWDD0011-SD-AA-AB-0 | KWDD0011-SD-AA-AB-0-A | KWDD0012-SD-AA-AB-0 | KWDD0013-SD-AA-AB-0 | KWDD0014-SD-AA-AB-0 | KWDD0015-SD-AA-AB-0 | KWDD0015-SD-AA-AB-0-A | KWDD0016-SD-AA-AB-0 | KWDD0017-SD-AA-AB-0 | KWDD0018-SD-AA-AB-0_A | KWDD0018-SD-AA-AB-0 | KWDD0018-SD-AA-AB-1 | KWDD0019-SD-AA-AB-0 | KWDD0020-SD-AA-AB-0 | KWDD0021-SD-AA-AB-0 | KWDD0021-SD-AA-AB-0-A | KWDD0022-SD-AA-AB-0 |
| | | Sample Date | 3/15/11 | 10/3/07 | 10/4/07 | 10/4/07 | 3/15/11 | 10/4/07 | 10/4/07 | 10/4/07 | 10/8/07 | 3/15/11 | 10/8/07 | 10/8/07 | 6/23/08 | 10/8/07 | 10/8/07 | 10/8/07 | 10/8/07 | 10/8/07 | 3/15/11 | 10/8/07 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 10300 J | 2360 | 1890 | 38400 J | 16300 J | 36400 J | 28900 J | 1850 | 1820 | 1050 | 2840 | 3430 | 20900 J | 18900 J | 19600 J | 3430 | 2120 | 13900 J | 5060 J | 32100 J |
| METALS | ANTIMONY | MG/KG | 2.8 J | 0.3 J | 0.15 UJ | 1.1 J | 4.5 J | 1.3 J | 0.95 UJ | 0.16 UJ | 0.18 UJ | 7.9 UJ | 0.63 J | 0.48 J | 2.7 J | 0.85 J | 1.8 J | 0.22 J | 0.16 UJ | 0.56 UJ | 0.93 J | 2.8 J |
| METALS | ARSENIC | MG/KG | 158 JD | 2.1 | 1.1 J | 115 J | 111 JD | 106 J | 115 J | 2.6 J | 39.2 | 5 J | 14.7 | 10.6 | 95.1 J | 72.2 J | 78 J | 3.8 | 1.9 | 60.4 J | 28.5 J | 103 J |
| METALS | BARIUM | MG/KG | 285 J | 23.5 J | 14.2 J | 1160 J | 404 J | 1100 J | 844 J | 5.9 J | 34.1 J | 18.2 J | 68.1 J | 46.3 J | 743 J | 771 J | 863 J | 15.5 J | 9.2 J | 455 J | 225 J | 1440 J |
| METALS | BERYLLIUM | MG/KG | 0.5 J | 0.14 J | 0.048 J | 1.1 J | 0.81 J | 0.96 J | 0.93 J | 0.043 J | 0.039 J | 0.045 J | 0.11 J | 0.1 J | 1.1 J | 0.53 J | 0.58 J | 0.072 J | 0.018 U | 0.37 J | 0.22 J | 0.76 J |
| METALS | CADMIUM | MG/KG | 6.8 J | 0.1 J | 0.033 J | 8.8 J | 5.8 J | 8.8 J | 7.5 J | 0.034 J | 0.33 J | 0.21 J | 0.82 J | 0.66 J | 8.2 J | 5.7 J | 6.3 J | 0.11 J | 0.34 J | 4.7 J | 2.1 J | 9.8 J |
| METALS | CALCIUM | MG/KG | 2370 J | 973 | 324 J | 8960 J | 2500 J | 8240 J | 8110 J | 57.9 J | 390 J | 225 J | 365 J | 493 J | 8640 J | 4830 J | 5300 J | 123 J | 115 J | 4190 J | 1230 J | 8180 J |
| METALS | CHROMIUM | MG/KG | 187 JD | 10.7 J | 9.5 | 189 J | 198 JD | 180 J | 173 J | 38.3 | 9.7 | 8 | 29.7 | 14.6 | 139 J | 102 J | 111 J | 31.1 | 15.3 | 84.6 J | 42.7 J | 177 J |
| METALS | COBALT | MG/KG | 5.4 J | 0.61 J | 0.17 J | 11.5 J | 7.6 J | 11.1 J | 11 J | 0.23 J | 0.49 J | 0.31 J | 1.1 J | 1.5 J | 10.1 J | 7.7 J | 8.4 J | 0.32 J | 0.52 J | 6.3 J | 3.6 J | 11.2 J |
| METALS | COPPER | MG/KG | 87.4 J | 3.8 J | 1 J | 373 J | 104 J | 350 J | 252 J | 0.76 J | 14.2 | 3.3 J | 14.4 | 15.7 | 235 J | 194 J | 231 J | 2 J | 0.51 J | 145 J | 53.6 J | 394 J |
| METALS | CYANIDE | MG/KG | 4.3 J | 0.49 U | 0.49 U | 3.7 UJ | 2.4 J | 3.5 UJ | 3 UJ | 0.46 U | 0.65 U | 0.61 U | 0.71 U | 0.66 U | 2.5 UJ | 2.2 UJ | 2.4 UJ | 0.57 U | 0.59 U | 1.9 UJ | 0.72 J | 3.2 UJ |
| METALS | IRON | MG/KG | 21000 J | 4710 | 2100 | 43600 J | 31800 J | 38600 J | 40500 J | 5610 | 2400 | 1290 | 5790 | 7100 | 29400 J | 33300 J | 36500 J | 6030 | 3040 | 18800 J | 11700 J | 46200 J |
| METALS | LEAD | MG/KG | 1750 JD | 14.3 | 5.8 J | 1450 J | 1140 JD | 1370 J | 1230 J | 1.9 J | 51.5 | 92.4 JD | 173 | 96.6 | 1180 J | 806 J | 894 J | 3.9 | 1.8 J | 720 J | 329 JD | 1350 J |
| METALS | MAGNESIUM | MG/KG | 758 J | 356 J | 238 J | 1980 J | 1350 J | 1860 J | 1930 J | 220 J | 157 J | 88 J | 218 J | 320 J | 2380 J | 1220 J | 1210 J | 384 J | 183 J | 767 J | 339 J | 1440 J |
| METALS | MANGANESE | MG/KG | 81 J | 17.5 | 6.2 J | 247 J | 128 JD | 208 J | 306 J | 2.6 J | 6.7 | 4 | 12.4 | 20.7 | 188 J | 244 J | 287 J | 2.9 | 4.2 | 118 J | 83.8 J | 325 J |
| METALS | MERCURY | MG/KG | 0.32 J | 0.049 U | 0.056 U | 0.88 J | 0.54 J | 0.76 J | 0.53 J | 0.053 U | 0.14 | 0.02 J | 0.065 U | 0.062 U | 0.76 J | 0.57 J | 0.69 J | 0.055 U | 0.054 U | 0.35 J | 0.19 J | 0.99 J |
| METALS | NICKEL | MG/KG | 11 J | 1.8 J | 0.9 J | 38.6 J | 15.9 J | 37.2 J | 35.6 J | 1.6 J | 2.2 J | 1.1 J | 3.2 J | 4 J | 30.1 J | 21.4 J | 23.9 J | 1.6 J | 1.6 J | 18.6 J | 7 J | 33.1 J |
| METALS | POTASSIUM | MG/KG | 804 J | 574 J | 454 J | 1800 J | 1520 J | 1700 J | 1640 J | 400 J | 229 J | 142 J | 292 J | 374 J | 732 J | 1000 J | 870 J | 685 J | 322 J | 569 J | 387 J | 1050 J |
| METALS | SELENIUM | MG/KG | 8.3 UJ | 0.2 J | 0.12 U | 3.6 J | 8.4 UJ | 4.8 J | 1.9 J | 0.8 J | 0.4 J | 4.6 U | 0.15 U | 0.16 J | 5.5 J | 0.64 J | 1 J | 0.61 J | 0.34 J | 2.3 J | 7.5 UJ | 1.5 J |
| METALS | SILVER | MG/KG | 2.4 UJ | 0.052 U | 0.051 U | 2.4 J | 0.42 J | 1.8 J | 1.6 J | 0.052 U | 0.061 U | 1.3 U | 0.064 U | 0.061 U | R | 1.4 J | 1.3 J | 0.055 U | 0.054 U | 0.94 J | 2.1 UJ | 3.2 J |
| METALS | SODIUM | MG/KG | 136 J | 33.3 J | 12.1 J | 383 J | 165 J | 385 J | 332 J | 12.6 J | 14.1 J | 661 U | 21.2 J | 27.7 J | 289 J | 192 J | 196 J | 4.8 J | 5.5 J | 153 J | 49.7 J | 246 J |
| METALS | THALLIUM | MG/KG | 5.9 UJ | 0.16 U | 0.15 U | 1 UJ | 6 UJ | 0.99 UJ | 0.95 UJ | 0.16 U | 0.18 U | 3.3 U | 0.19 U | 0.18 U | 0.92 UJ | 0.64 UJ | 0.68 UJ | 0.17 U | 0.16 U | 0.56 UJ | 5.4 UJ | 0.9 UJ |
| METALS | VANADIUM | MG/KG | 25.2 J | 6.2 J | 5 J | 49.7 J | 40.5 J | 47 J | 42.1 J | 13.5 | 5.8 J | 3.3 J | 9.2 J | 11.3 | 27.5 J | 34 J | 36.8 J | 19.2 | 6 J | 20.4 J | 12.8 J | 57.2 J |
| METALS | ZINC | MG/KG | 577 JD | 16.5 | 7.4 | 1290 J | 680 JD | 1260 J | 1090 J | 11.6 | 41.7 | 50 | 83.5 | 82.1 | 1090 J | 799 J | 892 J | 23.4 | 16.1 | 694 J | 286 J | 1320 J |
| PEST/PCB | 4,4'-DDD | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDT | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1016 | MG/KG | | 0.02 U | 0.019 U | 0.13 UJ | | 0.13 UJ | 0.12 UJ | 0.019 U | 0.023 U | | 0.024 U | 0.023 U | | 0.079 UJ | 0.083 UJ | 0.02 U | 0.02 U | 0.069 UJ | | 0.11 UJ |
| PEST/PCB | AROCLOR-1221 | MG/KG | | 0.02 U | 0.019 U | 0.13 UJ | | 0.13 UJ | 0.12 UJ | 0.019 U | 0.023 U | | 0.024 U | 0.023 U | | 0.079 UJ | 0.083 UJ | 0.02 U | 0.02 U | 0.069 UJ | | 0.11 UJ |
| PEST/PCB | AROCLOR-1232 | MG/KG | | 0.02 U | 0.019 U | 0.13 UJ | | 0.13 UJ | 0.12 UJ | 0.019 U | 0.023 U | | 0.024 U | 0.023 U | | 0.079 UJ | 0.083 UJ | 0.02 U | 0.02 U | 0.069 UJ | | 0.11 UJ |
| PEST/PCB | AROCLOR-1242 | MG/KG | | 0.02 U | 0.019 U | 0.13 UJ | | 0.13 UJ | 0.12 UJ | 0.019 U | 0.023 U | | 0.024 U | 0.023 U | | 0.079 UJ | 0.11 J | 0.02 U | 0.02 U | 0.069 UJ | | 0.11 UJ |
| PEST/PCB | AROCLOR-1248 | MG/KG | | 0.02 U | 0.019 U | 0.13 UJ | | 0.13 UJ | 0.12 UJ | 0.019 U | 0.023 U | | 0.024 U | 0.023 U | | 0.079 UJ | 0.083 UJ | 0.02 U | 0.02 U | 0.069 UJ | | 0.11 UJ |
| PEST/PCB | AROCLOR-1254 | MG/KG | | 0.02 U | 0.019 U | 0.34 J | | 0.33 J | 0.28 J | 0.019 U | 0.023 U | | 0.024 U | 0.023 U | | 0.45 J | 0.56 J | 0.02 U | 0.02 U | 0.11 J | | 0.11 UJ |
| PEST/PCB | AROCLOR-1260 | MG/KG | | 0.02 U | 0.019 UJ | 0.13 UJ | | 0.13 UJ | 0.12 UJ | 0.019 UJ | 0.023 U | | 0.024 U | 0.023 U | | 0.14 J | 0.16 J | 0.02 U | 0.02 U | 0.069 UJ | | 0.11 UJ |
| PEST/PCB | AROCLOR-1262 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1268 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | BETA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DELTA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DIELDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN I | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN II | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | METHOXYCHLOR | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | TOXAPHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 1,1'-BIPHENYL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 1,2,4,5-TETRACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,3,4,6-TETRACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | ACENAPHTHENE | MG/KG | | 0.39 U | 0.38 U | 2.5 UJ | | 2.5 UJ | 2.4 UJ | 0.38 U | 0.15 J | | 0.024 J | 0.079 J | | 0.13 J | 0.11 J | 0.4 U | 0.39 U | 1.4 UJ | | 2.2 UJ |
| SVOC | ACENAPHTHYLENE | MG/KG | | 0.39 U | 0.38 U | 0.17 J | | 0.16 J | 2.4 UJ | 0.38 U | 0.45 U | | 0.12 J | 0.14 J | | 0.29 J | 0.19 J | 0.4 U | 0.39 U | 1.4 UJ | | 0.16 J |
| SVOC | ACETOPHENONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | ANTHRACENE | MG/KG | | 0.021 J | 0.38 U | 0.19 J | | 0.16 J | 0.11 J | 0.38 U | 0.33 J | | 0.11 J | 0.3 J | | 0.39 J | 0.31 J | 0.4 U | 0.39 U | 1.4 UJ | | 0.14 J |
| SVOC | ATRAZINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | | 0.054 J | 0.38 U | 1.4 J | | 1 J | 0.58 J | 0.38 U | 0.51 | | 0.63 | 0.81 | | 2 J | 1.6 J | 0.4 U | 0.39 U | 0.29 J | | 0.9 J |
| SVOC | BENZO(A)PYRENE | MG/KG | | 0.054 J | 0.38 U | 1.5 J | | 1.3 J | 0.77 J | 0.38 U | 0.39 J | | 0.72 | 0.81 | | 2.3 J | 1.8 J | 0.4 U | 0.39 U | 0.39 J | | 1.2 J |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | | 0.06 J | 0.38 U | 1.6 J | | 2 J | 1.1 J | 0.38 U | 0.36 J | | 0.89 | 1 | | 2.3 J | 1.6 J | 0.4 U | 0.39 U | 0.52 J | | 1.2 J |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | | 0.019 J | 0.38 U | 0.43 J | | 0.42 J | 0.27 J | 0.38 U | 0.25 J | | 0.33 J | 0.25 J | | 0.61 J | 0.74 J | 0.4 U | 0.39 U | 0.2 J | | 0.38 J |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | | 0.048 J | 0.38 U | 2.4 J | | 1.7 J | 1.2 J | 0.38 U | 0.34 J | | 0.74 | 0.97 | | 2.8 J | 2.1 J | 0.4 U | 0.39 U | 0.5 J | | 1.6 J |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | KWDD0006 | KWDD0007 | KWDD0010 | KWDD0011 | KWDD0011 | KWDD0012 | KWDD0013 | KWDD0014 | KWDD0015 | KWDD0015 | KWDD0016 | KWDD0017 | KWDD0018 | KWDD0018 | KWDD0018 | KWDD0019 | KWDD0020 | KWDD0021 | KWDD0021 | KWDD0022 |
| | | Field Sample ID | KWDD0006-SD-AA-AB-0-A | KWDD0007-SD-AA-AB-0 | KWDD0010-SD-AA-AB-0 | KWDD0011-SD-AA-AB-0 | KWDD0011-SD-AA-AB-0-A | KWDD0012-SD-AA-AB-0 | KWDD0013-SD-AA-AB-0 | KWDD0014-SD-AA-AB-0 | KWDD0015-SD-AA-AB-0 | KWDD0015-SD-AA-AB-0-A | KWDD0016-SD-AA-AB-0 | KWDD0017-SD-AA-AB-0 | KWDD0018-SD-AA-AB-0_A | KWDD0018-SD-AA-AB-0 | KWDD0018-SD-AA-AB-1 | KWDD0019-SD-AA-AB-0 | KWDD0020-SD-AA-AB-0 | KWDD0021-SD-AA-AB-0 | KWDD0021-SD-AA-AB-0-A | KWDD0022-SD-AA-AB-0 |
| | | Sample Date | 3/15/11 | 10/3/07 | 10/4/07 | 10/4/07 | 3/15/11 | 10/4/07 | 10/4/07 | 10/4/07 | 10/8/07 | 3/15/11 | 10/8/07 | 10/8/07 | 6/23/08 | 10/8/07 | 10/8/07 | 10/8/07 | 10/8/07 | 10/8/07 | 3/15/11 | 10/8/07 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | CAPROLACTAM | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | CARBAZOLE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | CHRYSENE | MG/KG | | 0.071 J | 0.38 U | 1.9 J | | 1.6 J | 0.92 J | 0.38 U | 0.52 | | 1 | 1.2 | | 3 J | 2.1 J | 0.4 U | 0.39 U | 0.59 J | | 1.6 J |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | | 0.39 U | 0.38 U | 2.5 UJ | | 2.5 UJ | 2.4 UJ | 0.38 U | 0.093 J | | 0.12 J | 0.099 J | | 0.2 J | 0.22 J | 0.4 U | 0.39 U | 1.4 UJ | | 0.13 J |
| SVOC | DIBENZOFURAN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIMETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | FLUORANTHENE | MG/KG | | 0.13 J | 0.38 U | 2.7 J | | 2.2 J | 1.4 J | 0.38 U | 1.3 | | 1.6 | 2.7 | | 6.1 J | 4.5 J | 0.4 U | 0.39 U | 0.75 J | | 2.7 J |
| SVOC | FLUORENE | MG/KG | | 0.39 U | 0.38 U | 2.5 UJ | | 2.5 UJ | 2.4 UJ | 0.38 U | 0.14 J | | 0.092 J | 0.2 J | | 0.34 J | 0.24 J | 0.4 U | 0.39 U | 1.4 UJ | | 2.2 UJ |
| SVOC | HEXACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | | 0.019 J | 0.38 U | 0.53 J | | 0.39 J | 0.31 J | 0.38 U | 0.23 J | | 0.34 J | 0.27 J | | 0.62 J | 0.68 J | 0.4 U | 0.39 U | 0.19 J | | 0.37 J |
| SVOC | ISOPHORONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | NAPHTHALENE | MG/KG | | 0.39 U | 0.38 U | 2.5 UJ | | 2.5 UJ | 2.4 UJ | 0.38 U | 0.45 U | | 0.039 J | 0.16 J | | 0.078 J | 0.081 J | 0.4 U | 0.39 U | 1.4 UJ | | 2.2 UJ |
| SVOC | NITROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PENTACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PHENANTHRENE | MG/KG | | 0.076 J | 0.38 U | 1 J | | 0.79 J | 0.48 J | 0.38 U | 1.2 | | 0.87 | 1.4 | | 3 J | 2.4 J | 0.4 U | 0.39 U | 0.28 J | | 1 J |
| SVOC | PHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PYRENE | MG/KG | | 0.1 J | 0.38 U | 2.6 J | | 2.2 J | 1.2 J | 0.38 U | 1 | | 1.3 | 1.9 | | 4.4 J | 3.6 J | 0.4 U | 0.39 U | 0.56 J | | 2 J |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,3-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMOETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,4-DIOXANE (P-DIOXANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | ACETONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOFORM | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON DISULFIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON TETRACHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROFORM | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | ETHYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | ISOPROPYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ACETATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ETHYL KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYLCYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | STYRENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TETRACHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | VINYL CHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENE, O- | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES, M & P | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | | | | | | | | | | | | | | | | | | | | |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | KWDD0023 | KWDD0024 | KWDD0025 | KWDD0025 | KWDD0026 | KWDD0027 | KWDD0027 | KWDD0028 | KWDD0029 | KWDD0030 | KWDD0031 | KWDD0032 | KWDD0033 | KWDD0033 | KWDD0034 | KWDD0034 | KWDD0035 | KWDD0036 | KWDD0036 | KWDD0037 |
| | | Field Sample ID | KWDD0023-SD-AA-AB-0 | KWDD0024-SD-AA-AB-0 | KWDD0025-SD-AA-AB-0_A | KWDD0025-SD-AA-AB-0 | KWDD0026-SD-AA-AB-0 | KWDD0027-SD-AA-AB-0 | KWDD0027-SD-AA-AB-0-A | KWDD0028-SD-AA-AB-0 | KWDD0029-SD-AA-AB-0 | KWDD0030-SD-AA-AB-0 | KWDD0031-SD-AA-AB-0 | KWDD0032-SD-AA-AB-0 | KWDD0033-SD-AA-AB-0 | KWDD0033-SD-AA-AB-1 | KWDD0034-SD-AA-AB-0 | KWDD0034-SD-AA-AB-0-A | KWDD0035-SD-AA-AB-0 | KWDD0036-SD-AA-AB-0_A | KWDD0036-SD-AA-AB-0 | KWDD0037-SD-AA-AB-0 |
| | | Sample Date | 10/8/07 | 10/8/07 | 6/23/08 | 10/9/07 | 10/9/07 | 10/9/07 | 3/15/11 | 10/9/07 | 10/9/07 | 10/9/07 | 10/9/07 | 10/9/07 | 10/9/07 | 10/9/07 | 10/9/07 | 3/15/11 | 10/9/07 | 6/23/08 | 10/9/07 | 10/10/07 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 25900 J | 4930 | 2380 | 4090 | 1550 | 13800 J | 8310 J | 34300 J | 5100 | 2000 | 37900 J | 38400 J | 37000 J | 38400 J | 4010 | 17600 J | 12800 J | 16100 J | 21400 J | 349 |
| METALS | ANTIMONY | MG/KG | 0.9 UJ | 0.81 J | 2 J | 1.2 J | 0.44 J | 1.5 J | 2.8 J | 3.7 J | 0.41 J | 0.25 J | 4.3 J | 4.4 J | 3.4 J | 3.7 J | 1.2 J | 3.1 J | 3.3 J | 10.3 J | 5.9 J | 0.16 U |
| METALS | ARSENIC | MG/KG | 103 J | 116 | 16.5 J | 37.4 | 4.4 | 63.7 J | 62.3 J | 103 J | 4.1 | 2.2 | 103 J | 116 J | 104 J | 106 J | 27.1 | 67.1 J | 65.8 J | 94.1 J | 86 J | 1.2 J |
| METALS | BARIUM | MG/KG | 815 J | 66.9 J | 83.9 | 77.1 J | 25.6 J | 427 J | 259 J | 920 J | 38.6 J | 5.1 J | 1080 J | 1050 J | 971 J | 992 J | 123 J | 644 J | 366 J | 602 J | 708 J | 5.1 J |
| METALS | BERYLLIUM | MG/KG | 0.98 J | 0.39 J | 0.19 J | 0.19 J | 0.1 J | 0.48 J | 0.46 J | 1.1 J | 0.19 J | 0.02 U | 1.2 J | 1.2 J | 1.2 J | 1.2 J | 0.18 J | 0.44 J | 0.57 J | 0.75 J | 0.78 J | 0.018 U |
| METALS | CADMIUM | MG/KG | 8.6 J | 7.9 J | 0.65 J | 1.3 | 0.19 J | 5.5 J | 2.7 J | 9.7 J | 0.29 J | 0.86 J | 9.9 J | 11.1 J | 9.9 J | 10.1 J | 2 | 5.5 J | 5.8 J | 7.7 J | 7.7 J | 0.041 J |
| METALS | CALCIUM | MG/KG | 7160 J | 1410 J | 800 J | 360 J | 271 J | 4080 J | 2040 J | 7830 J | 359 J | 26.8 J | 8290 J | 8720 J | 7970 J | 8180 J | 763 J | 4460 J | 4290 J | 8020 J | 8330 J | 49.1 J |
| METALS | CHROMIUM | MG/KG | 172 J | 112 | 14.1 | 46.2 | 8.3 | 82.3 J | 76.4 JD | 192 J | 53.3 | 7.4 | 197 J | 222 J | 197 J | 204 J | 44.1 | 99.1 J | 83 J | 123 J | 117 J | 1.5 J |
| METALS | COBALT | MG/KG | 11.5 J | 2.8 J | 1.3 J | 1.2 J | 0.59 J | 9.1 J | 7.9 J | 11.3 J | 0.99 J | 0.51 J | 11.1 J | 12.7 J | 11 J | 11.4 J | 2.4 J | 8.2 J | 10.7 J | 12.1 J | 11.9 J | 0.087 J |
| METALS | COPPER | MG/KG | 261 J | 54.1 | 14.5 | 19.3 | 7.5 | 139 J | 59.3 J | 333 J | 1.4 J | 3.3 J | 378 J | 362 J | 347 J | 365 J | 29.3 | 195 J | 118 J | 286 J | 277 J | 0.3 J |
| METALS | CYANIDE | MG/KG | 3.2 UJ | 1 | 0.71 U | 0.96 | 0.56 U | 1.6 UJ | 1.4 J | 3.5 UJ | 0.55 U | 0.64 U | 3.6 UJ | 3.8 UJ | 3.2 UJ | 3.5 UJ | 0.61 U | 1.4 J | 1.8 UJ | 2.9 UJ | 2.3 UJ | 0.56 U |
| METALS | IRON | MG/KG | 37000 J | 12600 | 3720 | 4450 | 2880 | 19100 J | 19200 J | 36600 J | 8360 | 1080 | 38100 J | 41300 J | 38700 J | 39900 J | 10600 | 25100 J | 26200 J | 34600 J | 44600 J | 377 |
| METALS | LEAD | MG/KG | 1310 J | 1060 | 105 | 274 | 55.2 | 751 J | 530 JD | 1490 J | 5.5 | 32.7 | 1550 J | 1690 J | 1530 J | 1600 J | 328 | 891 JD | 734 J | 1110 J | 1010 J | 6.2 |
| METALS | MAGNESIUM | MG/KG | 1570 J | 362 J | 118 J | 358 J | 180 J | 890 J | 452 J | 1850 J | 662 J | 71.2 J | 1880 J | 2160 J | 2080 J | 2100 J | 434 J | 936 J | 1260 J | 1380 J | 2230 J | 9.1 J |
| METALS | MANGANESE | MG/KG | 214 J | 22.3 | 12.4 | 18.1 | 12.3 | 145 J | 105 JD | 198 J | 14.9 | 13.5 | 221 J | 256 J | 217 J | 223 J | 48.5 | 141 J | 105 J | 53 J | 80.6 J | 13.9 |
| METALS | MERCURY | MG/KG | 0.66 J | 0.084 J | 0.068 U | 0.12 J | 0.06 U | 0.52 J | 0.24 J | 1 J | 0.059 U | 0.084 J | 1.1 J | 1.2 J | 1.1 J | 1 J | 0.13 | 0.58 J | 0.38 J | 0.81 J | 0.83 J | 0.047 U |
| METALS | NICKEL | MG/KG | 34.9 J | 9.6 J | 3 J | 3.3 J | 1.3 J | 19.1 J | 10.2 J | 33.9 J | 3.4 J | 1.8 J | 33.1 J | 38.2 J | 34.8 J | 36.1 J | 5.7 J | 20.7 J | 26.5 J | 36.5 J | 40.9 J | 0.37 J |
| METALS | POTASSIUM | MG/KG | 1290 J | 577 J | 128 J | 687 J | 361 J | 827 J | 492 J | 1840 J | 995 | 129 J | 1860 J | 2090 J | 2040 J | 2100 J | 762 J | 926 J | 1800 J | 625 J | 1550 J | 8.6 J |
| METALS | SELENIUM | MG/KG | 2.9 J | 0.98 J | 1.7 | 0.38 J | 0.14 U | 0.38 UJ | 6.9 UJ | 2.5 J | 0.29 J | 0.14 U | 0.83 UJ | 2.3 J | 0.76 UJ | 2 J | 0.16 U | 15.1 UJ | 1.5 J | 2.4 J | 1.6 J | 0.2 J |
| METALS | SILVER | MG/KG | 1.5 J | 0.085 UJ | R | 0.2 J | 0.08 J | 1.2 J | 2 UJ | 2.6 J | 0.053 U | 0.17 J | 3.7 J | 3 J | 3.5 J | 2.7 J | 0.19 J | 1.2 J | 0.86 J | R | 1.6 J | 0.055 U |
| METALS | SODIUM | MG/KG | 251 J | 49 J | 27 J | 17.6 J | 15.3 J | 151 J | 114 J | 253 J | 27.3 J | 13.6 J | 342 J | 377 J | 331 J | 334 J | 21.4 J | 335 J | 120 J | 111 J | 218 J | 1.7 U |
| METALS | THALLIUM | MG/KG | 0.9 UJ | 0.26 U | 0.25 U | 0.21 U | 0.18 U | 0.49 UJ | 4.9 UJ | 0.94 UJ | 0.16 U | 0.18 U | 1.1 UJ | 1 UJ | 0.97 UJ | 0.97 UJ | 0.2 U | 10.8 UJ | 0.84 J | 0.74 UJ | 0.75 UJ | 0.16 U |
| METALS | VANADIUM | MG/KG | 36.2 J | 15.2 | 7.9 J | 12.1 | 5.3 J | 21 J | 20.5 J | 42.2 J | 21.8 | 3.6 J | 44.9 J | 46.1 J | 44.2 J | 45.6 J | 11.8 | 25.7 J | 24.4 J | 28 J | 41.1 J | 1.5 J |
| METALS | ZINC | MG/KG | 1220 J | 342 | 127 J | 102 | 30.6 | 821 J | 475 JD | 1310 J | 15.2 | 123 | 1360 J | 1480 J | 1360 J | 1410 J | 203 | 975 JD | 1030 J | 1720 J | 1890 J | 11.2 J |
| PEST/PCB | 4,4'-DDD | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDT | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1016 | MG/KG | 0.11 UJ | 0.032 U | | 0.026 U | 0.023 U | 0.062 UJ | | 0.12 UJ | 0.021 U | 0.022 U | 0.13 UJ | 0.14 UJ | 0.12 UJ | 0.12 UJ | 0.026 U | | 0.062 UJ | | 0.092 UJ | 0.02 U |
| PEST/PCB | AROCLOR-1221 | MG/KG | 0.11 UJ | 0.032 U | | 0.026 U | 0.023 U | 0.062 UJ | | 0.12 UJ | 0.021 U | 0.022 U | 0.13 UJ | 0.14 UJ | 0.12 UJ | 0.12 UJ | 0.026 U | | 0.062 UJ | | 0.092 UJ | 0.02 U |
| PEST/PCB | AROCLOR-1232 | MG/KG | 0.11 UJ | 0.032 U | | 0.026 U | 0.023 U | 0.062 UJ | | 0.12 UJ | 0.021 U | 0.022 U | 0.13 UJ | 0.14 UJ | 0.12 UJ | 0.12 UJ | 0.026 U | | 0.062 UJ | | 0.092 UJ | 0.02 U |
| PEST/PCB | AROCLOR-1242 | MG/KG | 0.11 UJ | 0.032 U | | 0.026 U | 0.023 U | 0.062 UJ | | 0.12 UJ | 0.021 U | 0.022 U | 0.13 UJ | 0.14 UJ | 0.12 UJ | 0.12 UJ | 0.026 U | | 0.062 UJ | | 0.29 J | 0.02 U |
| PEST/PCB | AROCLOR-1248 | MG/KG | 0.11 UJ | 0.032 U | | 0.026 U | 0.023 U | 0.062 UJ | | 0.12 UJ | 0.021 U | 0.022 U | 0.13 UJ | 0.14 UJ | 0.12 UJ | 0.12 UJ | 0.026 U | | 0.062 UJ | | 0.092 UJ | 0.02 U |
| PEST/PCB | AROCLOR-1254 | MG/KG | 0.29 J | 0.19 | | 0.027 | 0.023 U | 0.19 J | | 0.31 J | 0.021 U | 0.022 U | 0.39 J | 0.39 J | 0.31 J | 0.32 J | 0.07 | | 0.11 J | | 0.27 J | 0.02 U |
| PEST/PCB | AROCLOR-1260 | MG/KG | 0.11 UJ | 0.051 | | 0.026 U | 0.023 U | 0.062 UJ | | 0.12 UJ | 0.021 U | 0.022 U | 0.14 J | 0.14 UJ | 0.12 UJ | 0.12 UJ | 0.026 U | | 0.062 UJ | | 0.092 UJ | 0.02 UJ |
| PEST/PCB | AROCLOR-1262 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1268 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | BETA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DELTA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DIELDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN I | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN II | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | METHOXYCHLOR | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | TOXAPHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 1,1'-BIPHENYL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 1,2,4,5-TETRACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,3,4,6-TETRACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | ACENAPHTHENE | MG/KG | 2.2 UJ | 0.63 U | | 0.52 U | 0.45 U | 1.2 UJ | | 2.4 UJ | 0.41 U | 0.43 U | 2.5 UJ | 2.8 UJ | 2.4 UJ | 2.4 UJ | 0.51 U | | 1.2 UJ | | 0.16 J | 0.4 U |
| SVOC | ACENAPHTHYLENE | MG/KG | 2.2 UJ | 0.63 U | | 0.52 U | 0.45 U | 0.057 J | | 0.11 J | 0.41 U | 0.43 U | 2.5 UJ | 2.8 UJ | 2.4 UJ | 2.4 UJ | 0.51 U | | 1.2 UJ | | 0.31 J | 0.4 U |
| SVOC | ACETOPHENONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | ANTHRACENE | MG/KG | 0.11 J | 0.63 U | | 0.043 J | 0.021 J | 0.069 J | | 0.13 J | 0.41 U | 0.43 U | 2.5 UJ | 2.8 UJ | 0.12 J | 0.13 J | 0.03 J | | 0.079 J | | 0.66 J | 0.4 U |
| SVOC | ATRAZINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.63 J | 0.11 J | | 0.18 J | 0.091 J | 0.36 J | | 0.73 J | 0.41 U | 0.43 U | 0.7 J | 0.76 J | 0.74 J | 0.72 J | 0.15 J | | 0.38 J | | 3.2 J | 0.4 U |
| SVOC | BENZO(A)PYRENE | MG/KG | 0.84 J | 0.12 J | | 0.16 J | 0.067 J | 0.5 J | | 1 J | 0.41 U | 0.43 U | 1 J | 1.1 J | 1.1 J | 1.1 J | 0.18 J | | 0.54 J | | 3.8 J | 0.4 U |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 1.1 J | 0.12 J | | 0.17 J | 0.087 J | 0.48 J | | 1.5 J | 0.41 U | 0.43 U | 1.5 J | 1.4 J | 1.6 J | 1.5 J | 0.24 J | | 0.66 J | | 5.2 J | 0.4 U |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.32 J | 0.12 J | | 0.11 J | 0.058 J | 0.24 J | | 0.43 J | 0.41 U | 0.43 U | 0.35 J | 0.37 J | 0.35 J | 0.45 J | 0.093 J | | 0.24 J | | 0.95 J | 0.4 U |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 1.3 J | 0.14 J | | 0.2 J | 0.091 J | 0.69 J | | 1.3 J | 0.41 U | 0.43 U | 1.2 J | 1.6 J | 1.5 J | 1.3 J | 0.17 J | | 0.69 J | | 4.3 J | 0.4 U |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | KWDD0023 | KWDD0024 | KWDD0025 | KWDD0025 | KWDD0026 | KWDD0027 | KWDD0027 | KWDD0028 | KWDD0029 | KWDD0030 | KWDD0031 | KWDD0032 | KWDD0033 | KWDD0033 | KWDD0034 | KWDD0034 | KWDD0035 | KWDD0036 | KWDD0036 | KWDD0037 |
| | | Field Sample ID | KWDD0023-SD-AA-AB-0 | KWDD0024-SD-AA-AB-0 | KWDD0025-SD-AA-AB-0_A | KWDD0025-SD-AA-AB-0 | KWDD0026-SD-AA-AB-0 | KWDD0027-SD-AA-AB-0 | KWDD0027-SD-AA-AB-0-A | KWDD0028-SD-AA-AB-0 | KWDD0029-SD-AA-AB-0 | KWDD0030-SD-AA-AB-0 | KWDD0031-SD-AA-AB-0 | KWDD0032-SD-AA-AB-0 | KWDD0033-SD-AA-AB-0 | KWDD0033-SD-AA-AB-1 | KWDD0034-SD-AA-AB-0 | KWDD0034-SD-AA-AB-0-A | KWDD0035-SD-AA-AB-0 | KWDD0036-SD-AA-AB-0_A | KWDD0036-SD-AA-AB-0 | KWDD0037-SD-AA-AB-0 |
| | | Sample Date | 10/8/07 | 10/8/07 | 6/23/08 | 10/9/07 | 10/9/07 | 10/9/07 | 3/15/11 | 10/9/07 | 10/9/07 | 10/9/07 | 10/9/07 | 10/9/07 | 10/9/07 | 10/9/07 | 10/9/07 | 3/15/11 | 10/9/07 | 6/23/08 | 10/9/07 | 10/10/07 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | CAPROLACTAM | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | CARBAZOLE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | CHRYSENE | MG/KG | 1.1 J | 0.17 J | | 0.27 J | 0.16 J | 0.62 J | | 1.4 J | 0.41 U | 0.43 U | 1.3 J | 1.4 J | 1.4 J | 1.3 J | 0.26 J | | 0.72 J | | 4.7 J | 0.4 U |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.13 J | 0.63 U | | 0.024 J | 0.45 U | 1.2 UJ | | 0.14 J | 0.41 U | 0.43 U | 0.12 J | 2.8 UJ | 2.4 UJ | 2.4 UJ | 0.025 J | | 0.11 J | | 0.33 J | 0.4 U |
| SVOC | DIBENZOFURAN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIMETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | FLUORANTHENE | MG/KG | 1.4 J | 0.32 J | | 0.48 J | 0.29 J | 0.91 J | | 2 J | 0.03 J | 0.43 U | 2.1 J | 2.2 J | 2.2 J | 2 J | 0.51 J | | 0.97 J | | 9.4 J | 0.4 U |
| SVOC | FLUORENE | MG/KG | 2.2 UJ | 0.63 U | | 0.037 J | 0.022 J | 1.2 UJ | | 2.4 UJ | 0.41 U | 0.43 U | 2.5 UJ | 2.8 UJ | 2.4 UJ | 2.4 UJ | 0.51 U | | 1.2 UJ | | 0.22 J | 0.4 U |
| SVOC | HEXACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.32 J | 0.094 J | | 0.11 J | 0.046 J | 0.22 J | | 0.41 J | 0.41 U | 0.43 U | 0.29 J | 0.38 J | 0.34 J | 0.4 J | 0.094 J | | 0.23 J | | 1 J | 0.4 U |
| SVOC | ISOPHORONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | NAPHTHALENE | MG/KG | 2.2 UJ | 0.63 U | | 0.027 J | 0.035 J | 1.2 UJ | | 2.4 UJ | 0.41 U | 0.43 U | 2.5 UJ | 2.8 UJ | 2.4 UJ | 2.4 UJ | 0.51 U | | 1.2 UJ | | 1.8 UJ | 0.4 U |
| SVOC | NITROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PENTACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PHENANTHRENE | MG/KG | 0.45 J | 0.11 J | | 0.22 J | 0.14 J | 0.39 J | | 0.64 J | 0.41 U | 0.43 U | 0.56 J | 0.62 J | 0.61 J | 0.6 J | 0.18 J | | 0.27 J | | 2.4 J | 0.4 U |
| SVOC | PHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PYRENE | MG/KG | 1.1 J | 0.31 J | | 0.39 J | 0.25 J | 0.69 J | | 1.4 J | 0.025 J | 0.43 U | 1.3 J | 1.3 J | 1.3 J | 1.2 J | 0.39 J | | 0.74 J | | 5.4 J | 0.4 U |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,3-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMOETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,4-DIOXANE (P-DIOXANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | ACETONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOFORM | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON DISULFIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON TETRACHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROFORM | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | ETHYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | ISOPROPYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ACETATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ETHYL KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYLCYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | STYRENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TETRACHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | VINYL CHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENE, O- | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES, M & P | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | | | | | | | | | | | | | | | | | | | | |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | KWDD0038 | KWDD0039 | KWDD0040 | KWDD0040 | KWDD0040 | KWDD0041 | KWDD0042 | KWDD0043 | KWDD0044 | KWDD0044 | KWDD0045 | KWDD0045 | KWDD0046 | KWDD0047 | KWDD0048 | KWDD0049 | KWDD0049 | KWDD0050 | KWDD0051 | KWDD0052 |
| | | Field Sample ID | KWDD0038-SD-AA-AB-0 | KWDD0039-SD-AA-AB-0 | KWDD0040-SD-AA-AB-0 | KWDD0040-SD-AA-AB-0-A | KWDD0040-SD-AA-AB-1 | KWDD0041-SD-AA-AB-0 | KWDD0042-SD-AA-AB-0 | KWDD0043-SD-AA-AB-0 | KWDD0044-SD-AA-AB-0 | KWDD0044-SD-AA-AB-1 | KWDD0045-SD-AA-AB-0 | KWDD0045-SD-AA-AB-0-A | KWDD0046-SD-AA-AB-0 | KWDD0047-SD-AA-AB-0 | KWDD0048-SD-AA-AB-0 | KWDD0049-SD-AA-AB-0 | KWDD0049-SD-AA-AB-0-A | KWDD0050-SD-AA-AB-0 | KWDD0051-SD-AA-AB-0 | KWDD0052-SD-AA-AB-0 |
| | | Sample Date | 10/10/07 | 10/10/07 | 10/10/07 | 3/15/11 | 10/10/07 | 10/10/07 | 10/10/07 | 10/11/07 | 10/11/07 | 10/11/07 | 10/11/07 | 3/16/11 | 10/11/07 | 10/16/07 | 10/16/07 | 10/16/07 | 3/16/11 | 10/16/07 | 10/16/07 | 10/16/07 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 8860 J | 39500 J | 32500 J | 30600 J | 29800 J | 25700 J | 2380 | 4040 | 5850 J | 5310 J | 7440 J | 7460 J | 13700 J | 30900 J | 40200 J | 39900 J | 36800 J | 35900 J | 6940 | 213 |
| METALS | ANTIMONY | MG/KG | 1.4 J | 6 J | 2.3 J | 3 J | 2.9 J | 3.5 J | 0.27 J | 0.49 J | 1.9 J | 0.84 J | 1.3 J | 14 UJ | 1.8 J | 1.5 J | 1 UJ | 2.9 J | 32.7 UJ | 1.4 J | 0.17 UJ | 0.16 UJ |
| METALS | ARSENIC | MG/KG | 58.1 J | 106 J | 122 J | 111 J | 119 J | 91.3 J | 4.3 | 59.5 | 32 J | 28.9 J | 42.7 J | 30 J | 68.3 J | 115 J | 144 J | 150 J | 108 J | 118 J | 9.4 | 0.73 J |
| METALS | BARIUM | MG/KG | R | R | R | 1450 J | R | R | 8.7 J | 28.4 J | 172 J | 154 J | 246 J | 299 J | 466 J | 1070 J | 1340 J | 1320 J | 1240 J | 1090 J | 9.6 J | 8.8 J |
| METALS | BERYLLIUM | MG/KG | 0.26 J | 1.1 J | 1 J | 0.88 J | 0.94 J | 0.81 J | 0.045 J | 0.12 J | 0.11 J | 0.12 J | 0.2 J | 0.13 J | 0.39 J | 1.1 J | 1.4 J | 1.5 J | 0.96 J | 1.3 J | 0.096 J | 0.017 U |
| METALS | CADMIUM | MG/KG | 4.5 J | 10.2 J | 10.8 J | 10.5 J | 10.9 J | 8.6 J | 1.1 | 0.41 J | 1.6 J | 1.5 J | 2.9 J | 2.1 J | 5.1 J | 11.1 J | 15 J | 15.6 J | 11.1 J | 12.7 J | 0.052 J | 0.022 J |
| METALS | CALCIUM | MG/KG | 3670 J | 8670 J | 8880 J | 8650 J | 8360 J | 6020 J | 145 J | 468 J | 2060 J | 1710 J | 2890 J | 1690 J | 4890 J | 8240 J | 10700 J | 10900 J | 9190 J | 8530 J | 84 J | 149 J |
| METALS | CHROMIUM | MG/KG | 59.8 J | 202 J | 207 J | 193 JD | 201 J | 157 J | 13.5 J | 30.3 | 23.3 J | 20.5 J | 41.4 J | 38.1 J | 86.4 J | 211 J | 296 J | 302 J | 230 JD | 238 J | 38.4 | 1.2 J |
| METALS | COBALT | MG/KG | 7.3 J | 10.7 J | 12.2 J | 13.2 J | 12.2 J | 11.1 J | 0.66 J | 0.7 J | 5.8 J | 4.8 J | 6.2 J | 5.1 J | 9.3 J | 13.6 J | 16 J | 16 J | 12.8 J | 12.9 J | 0.26 J | 0.13 J |
| METALS | COPPER | MG/KG | 96.6 J | 406 J | 306 J | 394 J | 302 J | 245 J | 3 J | 12 | 60.5 J | 47 J | 64.6 J | 70.7 J | 130 J | 338 J | 452 J | 434 J | 376 J | 370 J | 2.8 J | 0.18 J |
| METALS | CYANIDE | MG/KG | 1.2 UJ | 3.3 UJ | 3.6 UJ | 3.8 J | 4.2 UJ | 2.9 UJ | 0.5 U | 0.76 U | 1.2 UJ | 1.2 UJ | 1.3 UJ | 0.8 J | 2.2 UJ | 3.1 UJ | 3.9 UJ | 3.9 UJ | 2.9 J | 2.4 UJ | 0.63 U | 0.57 U |
| METALS | IRON | MG/KG | 15000 J | 38100 J | 38200 J | 47400 J | 36600 J | 28900 J | 3440 | 37900 | 10200 J | 9300 J | 12500 J | 12600 J | 19800 J | 40000 J | 51500 J | 52700 J | 35700 J | 42800 J | 10300 | 564 |
| METALS | LEAD | MG/KG | 623 J | 1620 J | 1560 J | 1500 JD | 1540 J | 1270 J | 17.3 | 284 | 298 J | 268 J | 507 J | 378 JD | 854 J | 1700 J | 2270 J | 2260 J | 1700 JD | 1820 J | 6.2 | 2.4 |
| METALS | MAGNESIUM | MG/KG | 595 J | 1920 J | 2130 J | 1660 J | 1840 J | 1570 J | 249 J | 113 J | 206 J | 195 J | 392 J | 334 J | 828 J | 1660 J | 2280 J | 2340 J | 1690 J | 2120 J | 506 J | 3 J |
| METALS | MANGANESE | MG/KG | 122 J | 212 J | 304 J | 383 JD | 295 J | 160 J | 8.3 | 8.2 | 31.7 J | 28.4 J | 76 J | 67.4 J | 142 J | 247 J | 309 J | 322 J | 167 J | 230 J | 13.3 | 24.7 |
| METALS | MERCURY | MG/KG | 0.25 J | 1.2 J | 1.2 J | 1.3 J | 0.95 J | 0.78 J | 0.042 U | 0.076 U | 0.095 UJ | 0.11 UJ | 0.13 UJ | 0.23 J | 0.35 J | 0.84 J | 0.87 J | 1.2 J | 1.2 J | 1 J | 0.062 U | 0.056 U |
| METALS | NICKEL | MG/KG | 15.8 J | 35.3 J | 35.8 J | 31.5 J | 35.3 J | 31.5 J | 2.7 J | 3 J | 13.5 J | 11.8 J | 14.2 J | 10.2 J | 22.3 J | 37.5 J | 47.5 J | 48.4 J | 36 J | 39.7 J | 1.3 J | 0.069 U |
| METALS | POTASSIUM | MG/KG | 468 J | 1730 J | 1810 J | 1500 J | 1420 J | 1460 J | 408 J | 85.6 J | 125 J | 110 J | 231 J | 286 J | 540 J | 1490 J | 1910 J | 2030 J | 1560 J | 2000 J | 854 J | 14.9 J |
| METALS | SELENIUM | MG/KG | 0.66 J | 3.7 J | 5 J | 17.9 UJ | 2.2 J | 0.62 UJ | 0.27 J | 0.19 U | 0.72 J | 1.2 J | 0.4 J | 8.1 UJ | 1.8 J | 0.88 J | 0.82 UJ | 0.86 UJ | 19.1 UJ | 0.59 UJ | 0.77 J | 0.12 UJ |
| METALS | SILVER | MG/KG | 0.27 J | 3.1 J | 2.3 J | 3.3 J | 1.3 J | 1.3 J | 0.054 U | 0.08 UJ | 0.11 UJ | 0.24 J | 0.13 UJ | 2.3 UJ | 0.62 J | 2.4 J | 2.8 J | 2.5 J | 2 J | 2.2 J | 0.058 U | 0.052 U |
| METALS | SODIUM | MG/KG | 81.9 J | 283 J | 366 J | 684 J | 344 J | 246 J | 4.7 J | 2.5 U | 29 J | 32.3 J | 72.7 J | 77 J | 139 J | 8.9 UJ | 11.1 UJ | 11.6 UJ | 226 J | 8.1 UJ | 1.8 U | 1.6 U |
| METALS | THALLIUM | MG/KG | 0.38 UJ | 0.99 UJ | 1.1 UJ | 12.8 UJ | 1.1 UJ | 0.8 UJ | 0.16 U | 0.24 U | 0.34 UJ | 0.33 UJ | 0.39 UJ | 5.8 UJ | 0.6 UJ | 1.1 J | 1 UJ | 1.1 UJ | 13.6 UJ | 0.76 UJ | 0.17 U | 0.16 U |
| METALS | VANADIUM | MG/KG | 12.9 J | 45.2 J | 39.2 J | 49 J | 36.3 J | 32.8 J | 7.4 J | 14.8 | 11.7 J | 10.1 J | 12.1 J | 13.4 J | 20 J | 41.7 J | 50.7 J | 50.4 J | 41 J | 44.9 J | 37.8 | 1.5 J |
| METALS | ZINC | MG/KG | 626 J | 1410 J | 1390 J | 1480 JD | 1390 J | 1180 J | 48.4 J | 39.4 J | 360 J | 328 J | 540 J | 362 J | 778 J | 1450 J | 1930 J | 1980 J | 1590 JD | 1570 J | 6.4 | 2 J |
| PEST/PCB | 4,4'-DDD | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDT | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1016 | MG/KG | 0.048 UJ | 0.12 UJ | 0.14 UJ | | 0.14 UJ | 0.1 UJ | 0.02 U | 0.031 U | 0.043 UJ | 0.041 UJ | 0.049 UJ | | 0.072 UJ | 0.1 UJ | 0.13 UJ | 0.14 UJ | | 0.098 UJ | 0.022 U | 0.02 U |
| PEST/PCB | AROCLOR-1221 | MG/KG | 0.048 UJ | 0.12 UJ | 0.14 UJ | | 0.14 UJ | 0.1 UJ | 0.02 U | 0.031 U | 0.043 UJ | 0.041 UJ | 0.049 UJ | | 0.072 UJ | 0.1 UJ | 0.13 UJ | 0.14 UJ | | 0.098 UJ | 0.022 U | 0.02 U |
| PEST/PCB | AROCLOR-1232 | MG/KG | 0.048 UJ | 0.12 UJ | 0.14 UJ | | 0.14 UJ | 0.1 UJ | 0.02 U | 0.031 U | 0.043 UJ | 0.041 UJ | 0.049 UJ | | 0.072 UJ | 0.1 UJ | 0.13 UJ | 0.14 UJ | | 0.098 UJ | 0.022 U | 0.02 U |
| PEST/PCB | AROCLOR-1242 | MG/KG | 0.048 UJ | 0.12 UJ | 0.14 UJ | | 0.14 UJ | 0.1 UJ | 0.02 U | 0.031 U | 0.043 UJ | 0.041 UJ | 0.049 UJ | | 0.072 UJ | 0.1 UJ | 0.13 UJ | 0.14 UJ | | 0.098 UJ | 0.022 U | 0.02 U |
| PEST/PCB | AROCLOR-1248 | MG/KG | 0.048 UJ | 0.12 UJ | 0.14 UJ | | 0.14 UJ | 0.1 UJ | 0.02 U | 0.031 U | 0.043 UJ | 0.041 UJ | 0.049 UJ | | 0.072 UJ | 0.1 UJ | 0.13 UJ | 0.14 UJ | | 0.098 UJ | 0.022 U | 0.02 U |
| PEST/PCB | AROCLOR-1254 | MG/KG | 0.14 J | 0.35 J | 0.43 J | | 0.42 J | 0.36 J | 0.02 U | 0.031 U | 0.08 J | 0.076 J | 0.074 J | | 0.15 J | 0.34 J | 0.41 J | 0.42 J | | 0.31 J | 0.022 U | 0.02 U |
| PEST/PCB | AROCLOR-1260 | MG/KG | 0.048 UJ | 0.12 UJ | 0.14 UJ | | 0.14 UJ | 0.1 UJ | 0.02 UJ | 0.031 UJ | 0.043 UJ | 0.041 UJ | 0.049 UJ | | 0.072 UJ | 0.1 UJ | 0.13 UJ | 0.14 UJ | | 0.098 UJ | 0.022 U | 0.02 U |
| PEST/PCB | AROCLOR-1262 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1268 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | BETA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DELTA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DIELDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN I | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN II | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | METHOXYCHLOR | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | TOXAPHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 1,1'-BIPHENYL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 1,2,4,5-TETRACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,3,4,6-TETRACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | ACENAPHTHENE | MG/KG | 0.94 UJ | 2.4 UJ | 2.8 UJ | | 2.8 UJ | 2.1 UJ | 0.4 U | 0.61 U | 0.85 UJ | 0.8 UJ | 0.97 UJ | | 1.4 UJ | 2.1 UJ | 2.5 UJ | 2.8 UJ | | 1.9 UJ | 0.43 U | 0.39 U |
| SVOC | ACENAPHTHYLENE | MG/KG | 0.94 UJ | 2.4 UJ | 2.8 UJ | | 2.8 UJ | 2.1 UJ | 0.4 U | 0.61 U | 0.85 UJ | 0.8 UJ | 0.97 UJ | | 1.4 UJ | 2.1 UJ | 2.5 UJ | 2.8 UJ | | 1.9 UJ | 0.43 U | 0.39 U |
| SVOC | ACETOPHENONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | ANTHRACENE | MG/KG | 0.94 UJ | 0.13 J | 0.14 J | | 2.8 UJ | 0.13 J | 0.4 U | 0.61 U | 0.85 UJ | 0.8 UJ | 0.97 UJ | | 1.4 UJ | 2.1 UJ | 2.5 UJ | 0.13 J | | 0.098 J | 0.43 U | 0.39 U |
| SVOC | ATRAZINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.23 J | 0.73 J | 0.91 J | | 0.6 J | 0.77 J | 0.4 U | 0.61 U | 0.1 J | 0.13 J | 0.12 J | | 0.23 J | 0.41 J | 0.56 J | 0.72 J | | 0.51 J | 0.43 U | 0.39 U |
| SVOC | BENZO(A)PYRENE | MG/KG | 0.27 J | 0.96 J | 1.1 J | | 0.75 J | 1 J | 0.4 U | 0.61 U | 0.1 J | 0.14 J | 0.16 J | | 0.33 J | 0.61 J | 0.78 J | 1.1 J | | 0.7 J | 0.43 U | 0.39 U |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 0.37 J | 1.3 J | 2.1 J | | 0.73 J | 1.5 J | 0.4 U | 0.61 U | 0.12 J | 0.17 J | 0.21 J | | 0.45 J | 0.78 J | 0.85 J | 1.2 J | | 0.72 J | 0.43 U | 0.39 U |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.17 J | 0.51 J | 0.56 J | | 0.5 J | 0.48 J | 0.4 U | 0.61 U | 0.082 J | 0.072 J | 0.095 J | | 0.17 J | 0.49 J | 0.52 J | 0.77 J | | 0.43 J | 0.43 U | 0.39 U |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.38 J | 1.1 J | 1.1 J | | 1.2 J | 1.4 J | 0.4 U | 0.61 U | 0.096 J | 0.21 J | 0.18 J | | 0.28 J | 0.83 J | 1.1 J | 1.4 J | | 0.98 J | 0.43 U | 0.39 U |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | KWDD0038 | KWDD0039 | KWDD0040 | KWDD0040 | KWDD0040 | KWDD0041 | KWDD0042 | KWDD0043 | KWDD0044 | KWDD0044 | KWDD0045 | KWDD0045 | KWDD0046 | KWDD0047 | KWDD0048 | KWDD0049 | KWDD0049 | KWDD0050 | KWDD0051 | KWDD0052 |
| | | Field Sample ID | KWDD0038-SD-AA-AB-0 | KWDD0039-SD-AA-AB-0 | KWDD0040-SD-AA-AB-0 | KWDD0040-SD-AA-AB-0-A | KWDD0040-SD-AA-AB-1 | KWDD0041-SD-AA-AB-0 | KWDD0042-SD-AA-AB-0 | KWDD0043-SD-AA-AB-0 | KWDD0044-SD-AA-AB-0 | KWDD0044-SD-AA-AB-1 | KWDD0045-SD-AA-AB-0 | KWDD0045-SD-AA-AB-0-A | KWDD0046-SD-AA-AB-0 | KWDD0047-SD-AA-AB-0 | KWDD0048-SD-AA-AB-0 | KWDD0049-SD-AA-AB-0 | KWDD0049-SD-AA-AB-0-A | KWDD0050-SD-AA-AB-0 | KWDD0051-SD-AA-AB-0 | KWDD0052-SD-AA-AB-0 |
| | | Sample Date | 10/10/07 | 10/10/07 | 10/10/07 | 3/15/11 | 10/10/07 | 10/10/07 | 10/10/07 | 10/11/07 | 10/11/07 | 10/11/07 | 10/11/07 | 3/16/11 | 10/11/07 | 10/16/07 | 10/16/07 | 10/16/07 | 3/16/11 | 10/16/07 | 10/16/07 | 10/16/07 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | CAPROLACTAM | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | CARBAZOLE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | CHRYSENE | MG/KG | 0.41 J | 1.2 J | 1.6 J | | 1 J | 1.3 J | 0.4 U | 0.61 U | 0.18 J | 0.22 J | 0.23 J | | 0.48 J | 0.9 J | 1.1 J | 1.4 J | | 1 J | 0.43 U | 0.39 U |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.94 UJ | 2.4 UJ | 2.8 UJ | | 2.8 UJ | 2.1 UJ | 0.4 U | 0.61 U | 0.85 UJ | 0.8 UJ | 0.97 UJ | | 1.4 UJ | 0.15 J | 0.19 J | 0.31 J | | 0.17 J | 0.43 U | 0.39 U |
| SVOC | DIBENZOFURAN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIMETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | FLUORANTHENE | MG/KG | 0.55 J | 1.7 J | 2 J | | 1.4 J | 1.8 J | 0.4 U | 0.038 J | 0.28 J | 0.37 J | 0.33 J | | 0.67 J | 1.4 J | 1.7 J | 2.3 J | | 1.5 J | 0.43 U | 0.39 U |
| SVOC | FLUORENE | MG/KG | 0.94 UJ | 2.4 UJ | 2.8 UJ | | 2.8 UJ | 2.1 UJ | 0.4 U | 0.61 U | 0.85 UJ | 0.8 UJ | 0.97 UJ | | 1.4 UJ | 2.1 UJ | 2.5 UJ | 2.8 UJ | | 1.9 UJ | 0.43 U | 0.39 U |
| SVOC | HEXACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.16 J | 0.56 J | 0.64 J | | 0.48 J | 0.48 J | 0.4 U | 0.61 U | 0.068 J | 0.054 J | 0.077 J | | 0.15 J | 0.34 J | 0.47 J | 0.61 J | | 0.42 J | 0.43 U | 0.39 U |
| SVOC | ISOPHORONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | NAPHTHALENE | MG/KG | 0.94 UJ | 2.4 UJ | 2.8 UJ | | 2.8 UJ | 2.1 UJ | 0.4 U | 0.61 U | 0.85 UJ | 0.8 UJ | 0.97 UJ | | 1.4 UJ | 2.1 UJ | 2.5 UJ | 2.8 UJ | | 1.9 UJ | 0.43 U | 0.39 U |
| SVOC | NITROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PENTACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PHENANTHRENE | MG/KG | 0.2 J | 0.64 J | 0.8 J | | 0.56 J | 0.69 J | 0.4 U | 0.61 U | 0.11 J | 0.15 J | 0.12 J | | 0.28 J | 0.43 J | 0.51 J | 0.7 J | | 0.47 J | 0.43 U | 0.39 U |
| SVOC | PHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PYRENE | MG/KG | 0.51 J | 1.6 J | 2 J | | 1.3 J | 1.6 J | 0.4 U | 0.037 J | 0.23 J | 0.23 J | 0.24 J | | 0.46 J | 0.92 J | 1.1 J | 1.3 J | | 0.9 J | 0.43 U | 0.39 U |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,3-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMOETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,4-DIOXANE (P-DIOXANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | ACETONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOFORM | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON DISULFIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON TETRACHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROFORM | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | ETHYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | ISOPROPYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ACETATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ETHYL KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYLCYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | STYRENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TETRACHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | VINYL CHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENE, O- | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES, M & P | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | | | | | | | | | | | | | | | | | | | | |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | KWDD0053 | KWDD0054 | KWDD0054 | KWDD0055 | KWDD0055 | KWDD0055 | KWDD0056 | KWDD0057 | KWDD0058 | KWDD0059 | KWDD0060 | KWDD0061 | KWDD0062 | KWDD0063 | KWDD0064 | KWDD0065 | KWDD0066 | KWDD0067 | KWDD0068 | KWDD0069 |
| | | Field Sample ID | KWDD0053-SD-AA-AB-0 | KWDD0054-SD-AA-AB-0 | KWDD0054-SD-AA-AB-0-A | KWDD0055-SD-AA-AB-0_A | KWDD0055-SD-AA-AB-0 | KWDD0055-SD-AA-AB-1 | KWDD0056-SD-AA-AB-0 | KWDD0057-SD-AA-AB-0 | KWDD0058-SD-AA-AB-0 | KWDD0059-SD-AA-AB-0 | KWDD0060-SD-AA-AB-0 | KWDD0061-SD-AA-AB-0 | KWDD0062-SD-AA-AB-0 | KWDD0063-SD-AA-AB-0 | KWDD0064-SD-AA-AB-0 | KWDD0065-SD-AA-AB-0 | KWDD0066-SD-AA-AB-0 | KWDD0067-SD-AA-AB-0 | KWDD0068-SD-AA-AB-0 | KWDD0069-SD-AA-AB-0 |
| | | Sample Date | 10/16/07 | 10/16/07 | 3/16/11 | 6/26/08 | 10/16/07 | 10/16/07 | 10/16/07 | 10/16/07 | 10/16/07 | 10/17/07 | 10/17/07 | 10/17/07 | 10/17/07 | 10/17/07 | 10/17/07 | 10/17/07 | 10/17/07 | 10/18/07 | 10/18/07 | 10/18/07 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 1280 | 22300 J | 21800 J | 30400 J | 36800 J | 43900 J | 37900 J | 31100 J | 3720 | 1710 | 21000 J | 19600 J | 24100 J | 21600 J | 26100 J | 20300 J | 2830 | 11600 J | 8280 J | 4980 J |
| METALS | ANTIMONY | MG/KG | 0.18 UJ | 2.3 J | 23.3 UJ | 2.1 J | 1.9 J | 2 J | 16.9 J | 1.1 J | 0.54 J | 0.4 J | 2.2 J | 1.6 J | 2.2 J | 0.81 UJ | 1.3 J | 1.6 J | 0.17 UJ | 6.4 J | 2.2 J | 1.8 J |
| METALS | ARSENIC | MG/KG | 11.5 | 101 J | 87.9 J | 113 J | 129 J | 150 J | 146 J | 113 J | 16.4 | 1.6 J | 93.2 J | 94.8 J | 110 J | 97 J | 121 J | 98.7 J | 1.7 J | 76.3 J | 86.7 J | 5.9 J |
| METALS | BARIUM | MG/KG | 12.7 J | 804 J | 766 J | 1310 J | 1230 J | 1440 J | 1270 J | 1000 J | 64.2 | 5.8 J | 823 J | 843 J | 1010 J | 896 J | 1030 J | 804 J | 9.9 J | 570 J | 311 J | 106 J |
| METALS | BERYLLIUM | MG/KG | 0.02 U | 1 J | 0.53 J | 1.3 J | 1.3 J | 1.4 J | 1.6 J | 1.1 J | 0.59 J | 0.018 U | 0.84 J | 0.86 J | 1.1 J | 0.9 J | 1.1 J | 0.97 J | 0.083 J | 0.81 J | 0.45 J | 0.22 J |
| METALS | CADMIUM | MG/KG | 0.8 J | 10.3 J | 8 J | R | 14 J | 16 J | 14.6 J | 12.2 J | 2.1 | 0.039 J | 8.9 J | 9.8 J | 11.8 J | 10.5 J | 13.3 J | 10 J | 0.86 J | R | R | 0.48 J |
| METALS | CALCIUM | MG/KG | 90.4 J | 6730 J | 6030 J | 9280 J | 9400 J | 12300 J | 10700 J | 8470 J | 716 J | 22.5 J | 6700 J | 7480 J | 8450 J | 7600 J | 9370 J | 7690 J | 115 J | 9080 J | 6790 J | 3930 J |
| METALS | CHROMIUM | MG/KG | 14.7 | 180 J | 160 JD | 231 J | 276 J | 319 J | 300 J | 238 J | 33 | 4.9 | 170 J | 186 J | 235 J | 206 J | 265 J | 201 J | 7.3 | 67 J | 70.4 J | 11.6 J |
| METALS | COBALT | MG/KG | 0.65 J | 11.9 J | 11.3 J | 13.2 J | 14.4 J | 16.5 J | 13.4 J | 12.8 J | 2.9 J | 0.088 J | 11.6 J | 11.8 J | 13.1 J | 11.2 J | 13.6 J | 10.8 J | 0.4 J | 9.2 J | 3.9 J | 0.59 J |
| METALS | COPPER | MG/KG | 10 | 258 J | 227 J | 390 J | 419 J | 505 J | 415 J | 347 J | 24.5 J | 0.84 J | 246 J | 246 J | 308 J | 271 J | 328 J | 244 J | 2.2 J | 76.7 J | 75.2 J | 3.8 J |
| METALS | CYANIDE | MG/KG | 0.57 U | 2.7 UJ | 1.5 J | R | 3.4 UJ | 3 UJ | 3.7 UJ | 3.5 UJ | 0.68 U | 0.55 U | 2.6 UJ | 2.6 UJ | 2.4 J | 2.7 J | 3 UJ | 3.1 UJ | 0.64 U | 3.9 UJ | 1.9 UJ | 0.87 UJ |
| METALS | IRON | MG/KG | 952 | 33900 J | 26500 J | 35500 J | 44800 J | 50900 J | 48900 J | 40100 J | 8580 | 1070 | 27000 J | 30300 J | 32700 J | 30300 J | 37000 J | 32500 J | 1020 | 39900 J | 10400 J | 5060 J |
| METALS | LEAD | MG/KG | 139 | 1480 J | 1340 JD | 1910 J | 2140 J | 2500 J | 2280 J | 1820 J | 174 | 3.6 | 1480 J | 1470 J | 1830 J | 1600 J | 2030 J | 1540 J | 10.6 | 619 J | 890 J | 31 J |
| METALS | MAGNESIUM | MG/KG | 59.5 J | 1480 J | 1150 J | 1490 J | 2280 J | 2670 J | 2600 J | 2140 J | 508 J | 37.2 J | 1050 J | 1240 J | 1370 J | 1270 J | 1630 J | 1470 J | 90.6 J | 341 J | 328 J | 99.4 J |
| METALS | MANGANESE | MG/KG | 10.8 | 212 J | 142 J | 235 J | 253 J | 283 J | 304 J | 222 J | 9.2 | 2.1 J | 140 J | 221 J | 207 J | 197 J | 237 J | 193 J | 3.6 | 86.2 J | 65.2 J | 29.8 J |
| METALS | MERCURY | MG/KG | 0.059 U | 0.6 J | 0.69 J | 1.2 J | 1.1 J | 1.2 J | 1.1 J | 1.1 J | 0.057 U | 0.058 U | 0.91 J | 1.2 J | 0.92 J | 1.3 J | 1 J | 0.89 J | 0.053 U | 0.36 UJ | 0.15 UJ | 0.077 UJ |
| METALS | NICKEL | MG/KG | 1.5 J | 30.8 J | 27.3 J | 35.3 J | 42.6 J | 49.1 J | 471 J | 37.4 J | 9.3 J | 0.55 J | 29.3 J | 29 J | 34.4 J | 29.9 J | 36.6 J | 29.6 J | 1.7 J | 26.1 J | 12.2 J | 1.9 J |
| METALS | POTASSIUM | MG/KG | 121 J | 1130 J | 963 J | 907 J | 1800 J | 2090 J | 2200 J | 1710 J | 1150 J | 79.5 J | 670 J | 682 J | 820 J | 772 J | 1030 J | 901 J | 90.6 J | 152 J | 190 J | 68.3 J |
| METALS | SELENIUM | MG/KG | 0.14 U | 0.61 UJ | 13.6 UJ | 1.8 J | 0.95 J | 1.1 J | 0.79 UJ | 2.9 J | 0.14 UJ | 0.37 J | 2.9 J | 1.4 J | 2.9 J | 3.8 J | 2.3 J | 4.1 J | 0.27 J | 2.9 J | 2.7 J | 1.2 J |
| METALS | SILVER | MG/KG | 0.061 U | 1.2 J | 3.9 UJ | R | 2.7 J | 3.6 J | 2.6 J | 2.4 J | 0.096 J | 0.053 U | 1 J | 1.5 J | 2.1 J | 1.7 J | 1.7 J | 1.7 J | 0.058 U | 0.36 UJ | 0.18 UJ | 0.093 UJ |
| METALS | SODIUM | MG/KG | 1.9 U | 8.3 UJ | 241 J | 292 J | 9.9 UJ | 10.6 UJ | 10.7 UJ | 10.3 UJ | 2 U | 7.9 J | 183 J | 241 J | 229 J | 235 J | 284 J | 268 J | 12 J | 296 J | 112 J | 35 J |
| METALS | THALLIUM | MG/KG | 0.18 U | 1.5 J | 9.7 UJ | 1.1 J | 0.94 UJ | 1 UJ | 1 UJ | 0.97 UJ | 0.19 U | 0.16 U | 0.7 UJ | 0.78 UJ | 0.74 UJ | 0.81 UJ | 0.85 UJ | 0.9 UJ | 0.17 U | 1.1 UJ | 0.54 UJ | 0.28 UJ |
| METALS | VANADIUM | MG/KG | 3 J | 31.5 J | 27.6 J | 37.6 J | 46.7 J | 54.9 J | 48.3 J | 40.3 J | 9.6 J | 4.2 J | 28.6 J | 26.8 J | 32.5 J | 28.7 J | 34.6 J | 28.4 J | 5.5 J | 33.1 J | 16.7 J | 11.9 J |
| METALS | ZINC | MG/KG | 45.9 | 1250 J | 1200 JD | 1600 J | 1780 J | 2140 J | 1910 J | 1560 J | 169 | 1.7 J | 1240 J | 1270 J | 1570 J | 1700 J | 1660 J | 1280 J | 21.2 | 1060 J | 397 J | 55.6 J |
| PEST/PCB | 4,4'-DDD | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDT | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1016 | MG/KG | 0.022 U | 0.098 UJ | | | 0.12 UJ | 0.12 UJ | 0.13 UJ | 0.12 UJ | 0.024 U | 0.02 U | 0.093 UJ | 0.098 UJ | 0.093 UJ | 0.098 UJ | 0.1 UJ | 0.11 UJ | 0.021 U | 0.14 UJ | 0.067 UJ | 0.035 UJ |
| PEST/PCB | AROCLOR-1221 | MG/KG | 0.022 U | 0.098 UJ | | | 0.12 UJ | 0.12 UJ | 0.13 UJ | 0.12 UJ | 0.024 U | 0.02 U | 0.093 UJ | 0.098 UJ | 0.093 UJ | 0.098 UJ | 0.1 UJ | 0.11 UJ | 0.021 U | 0.14 UJ | 0.067 UJ | 0.035 UJ |
| PEST/PCB | AROCLOR-1232 | MG/KG | 0.022 U | 0.098 UJ | | | 0.12 UJ | 0.12 UJ | 0.13 UJ | 0.12 UJ | 0.024 U | 0.02 U | 0.093 UJ | 0.098 UJ | 0.093 UJ | 0.098 UJ | 0.1 UJ | 0.11 UJ | 0.021 U | 0.14 UJ | 0.067 UJ | 0.035 UJ |
| PEST/PCB | AROCLOR-1242 | MG/KG | 0.022 U | 0.098 UJ | | | 0.12 UJ | 0.12 UJ | 0.13 UJ | 0.12 UJ | 0.024 U | 0.02 U | 0.093 UJ | 0.098 UJ | 0.093 UJ | 0.098 UJ | 0.1 UJ | 0.11 UJ | 0.021 U | 0.14 UJ | 0.067 UJ | 0.035 UJ |
| PEST/PCB | AROCLOR-1248 | MG/KG | 0.022 U | 0.098 UJ | | | 0.12 UJ | 0.12 UJ | 0.13 UJ | 0.12 UJ | 0.024 U | 0.02 U | 0.093 UJ | 0.098 UJ | 0.093 UJ | 0.098 UJ | 0.1 UJ | 0.11 UJ | 0.021 U | 0.14 UJ | 0.067 UJ | 0.035 UJ |
| PEST/PCB | AROCLOR-1254 | MG/KG | 0.022 U | 0.34 J | | | 0.39 J | 0.41 J | 0.43 J | 0.39 J | 0.11 | 0.02 U | 0.28 J | 0.32 J | 0.32 J | 0.41 J | 0.38 J | 0.36 J | 0.021 U | 0.21 J | 0.067 UJ | 0.035 UJ |
| PEST/PCB | AROCLOR-1260 | MG/KG | 0.022 U | 0.098 UJ | | | 0.12 UJ | 0.13 J | 0.13 UJ | 0.12 UJ | 0.024 U | 0.02 U | 0.093 UJ | 0.098 UJ | 0.093 UJ | 0.11 J | 0.1 UJ | 0.11 UJ | 0.021 U | 0.14 UJ | 0.067 UJ | 0.035 UJ |
| PEST/PCB | AROCLOR-1262 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1268 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | BETA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DELTA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DIELDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN I | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN II | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | METHOXYCHLOR | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | TOXAPHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 1,1'-BIPHENYL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 1,2,4,5-TETRACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,3,4,6-TETRACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | ACENAPHTHENE | MG/KG | 0.45 U | 1.9 UJ | | | 2.4 UJ | 2.4 UJ | 2.5 UJ | 2.4 UJ | 0.038 J | 0.4 U | 1.8 UJ | 1.9 UJ | 1.8 UJ | 1.9 UJ | 2.1 UJ | 2.2 UJ | 0.42 U | 0.19 J | 1.3 UJ | 0.69 UJ |
| SVOC | ACENAPHTHYLENE | MG/KG | 0.45 U | 1.9 UJ | | | 2.4 UJ | 2.4 UJ | 2.5 UJ | 2.4 UJ | 0.032 J | 0.4 U | 1.8 UJ | 1.9 UJ | 1.8 UJ | 1.9 UJ | 2.1 UJ | 2.2 UJ | 0.42 U | 2.8 UJ | 1.3 UJ | 0.69 UJ |
| SVOC | ACETOPHENONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | ANTHRACENE | MG/KG | 0.45 U | 1.9 UJ | | | 2.4 UJ | 2.4 UJ | 2.5 UJ | 2.4 UJ | 0.13 J | 0.4 U | 0.11 J | 0.12 J | 0.13 J | 0.11 J | 0.12 J | 0.14 J | 0.42 U | 2.8 UJ | 1.3 UJ | 0.69 UJ |
| SVOC | ATRAZINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.021 J | 0.37 J | | | 0.52 J | 0.59 J | 0.53 J | 0.62 J | 0.43 J | 0.4 U | 0.44 J | 0.7 J | 0.71 J | 0.71 J | 0.72 J | 0.75 J | 0.42 U | 0.37 J | 0.28 J | 0.12 J |
| SVOC | BENZO(A)PYRENE | MG/KG | 0.45 U | 0.54 J | | | 0.72 J | 0.81 J | 0.76 J | 0.78 J | 0.42 J | 0.4 U | 0.69 J | 0.93 J | 0.88 J | 0.95 J | 1 J | 1.1 J | 0.42 U | 0.36 J | 0.25 J | 0.088 J |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 0.45 U | 0.66 J | | | 0.64 J | 0.87 J | 0.7 J | 0.76 J | 0.35 J | 0.4 U | 0.85 J | 0.76 J | 0.8 J | 0.86 J | 1.1 J | 1.3 J | 0.42 U | 0.37 J | 0.29 J | 0.11 J |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.45 U | 0.33 J | | | 0.54 J | 0.32 J | 0.54 J | 0.54 J | 0.16 J | 0.4 U | 0.22 J | 0.6 J | 0.55 J | 0.48 J | 0.45 J | 0.46 J | 0.42 U | 2.8 UJ | 0.1 J | 0.69 UJ |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.45 U | 0.56 J | | | 0.73 J | 0.91 J | 0.79 J | 0.79 J | 0.45 J | 0.4 U | 0.71 J | 1.2 J | 1.1 J | 1 J | 1 J | 1.1 J | 0.42 U | 0.59 J | 0.31 J | 0.11 J |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | KWDD0053 | KWDD0054 | KWDD0054 | KWDD0055 | KWDD0055 | KWDD0055 | KWDD0056 | KWDD0057 | KWDD0058 | KWDD0059 | KWDD0060 | KWDD0061 | KWDD0062 | KWDD0063 | KWDD0064 | KWDD0065 | KWDD0066 | KWDD0067 | KWDD0068 | KWDD0069 |
| | | Field Sample ID | KWDD0053-SD-AA-AB-0 | KWDD0054-SD-AA-AB-0 | KWDD0054-SD-AA-AB-0-A | KWDD0055-SD-AA-AB-0_A | KWDD0055-SD-AA-AB-0 | KWDD0055-SD-AA-AB-1 | KWDD0056-SD-AA-AB-0 | KWDD0057-SD-AA-AB-0 | KWDD0058-SD-AA-AB-0 | KWDD0059-SD-AA-AB-0 | KWDD0060-SD-AA-AB-0 | KWDD0061-SD-AA-AB-0 | KWDD0062-SD-AA-AB-0 | KWDD0063-SD-AA-AB-0 | KWDD0064-SD-AA-AB-0 | KWDD0065-SD-AA-AB-0 | KWDD0066-SD-AA-AB-0 | KWDD0067-SD-AA-AB-0 | KWDD0068-SD-AA-AB-0 | KWDD0069-SD-AA-AB-0 |
| | | Sample Date | 10/16/07 | 10/16/07 | 3/16/11 | 6/26/08 | 10/16/07 | 10/16/07 | 10/16/07 | 10/16/07 | 10/16/07 | 10/17/07 | 10/17/07 | 10/17/07 | 10/17/07 | 10/17/07 | 10/17/07 | 10/17/07 | 10/17/07 | 10/18/07 | 10/18/07 | 10/18/07 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | CAPROLACTAM | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | CARBAZOLE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | CHRYSENE | MG/KG | 0.033 J | 0.71 J | | | 1 J | 1.1 J | 1 J | 1.1 J | 0.52 | 0.4 U | 0.91 J | 1.2 J | 1.2 J | 1.1 J | 1.3 J | 1.4 J | 0.42 U | 0.6 J | 0.32 J | 0.12 J |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.45 U | 0.11 J | | | 0.19 J | 0.14 J | 0.21 J | 0.2 J | 0.067 J | 0.4 U | 1.8 UJ | 1.9 UJ | 1.8 UJ | 1.9 UJ | 2.1 UJ | 2.2 UJ | 0.42 U | 2.8 UJ | 1.3 UJ | 0.69 UJ |
| SVOC | DIBENZOFURAN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIMETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | FLUORANTHENE | MG/KG | 0.033 J | 1 J | | | 1.4 J | 1.6 J | 1.6 J | 1.6 J | 1.1 | 0.4 U | 1.3 J | 1.9 J | 1.9 J | 1.9 J | 2.1 J | 2.3 J | 0.027 J | 1.3 J | 0.5 J | 0.3 J |
| SVOC | FLUORENE | MG/KG | 0.45 U | 1.9 UJ | | | 2.4 UJ | 2.4 UJ | 2.5 UJ | 2.4 UJ | 0.064 J | 0.4 U | 1.8 UJ | 1.9 UJ | 1.8 UJ | 1.9 UJ | 2.1 UJ | 2.2 UJ | 0.42 U | 0.2 J | 1.3 UJ | 0.69 UJ |
| SVOC | HEXACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.45 U | 0.31 J | | | 0.43 J | 0.33 J | 0.47 J | 0.41 J | 0.17 J | 0.4 U | 0.24 J | 0.62 J | 0.48 J | 0.53 J | 0.53 J | 0.52 J | 0.42 U | 2.8 UJ | 0.1 J | 0.69 UJ |
| SVOC | ISOPHORONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | NAPHTHALENE | MG/KG | 0.45 U | 1.9 UJ | | | 2.4 UJ | 2.4 UJ | 2.5 UJ | 2.4 UJ | 0.026 J | 0.4 U | 1.8 UJ | 1.9 UJ | 1.8 UJ | 1.9 UJ | 2.1 UJ | 2.2 UJ | 0.42 U | 2.8 UJ | 1.3 UJ | 0.69 UJ |
| SVOC | NITROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PENTACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PHENANTHRENE | MG/KG | 0.45 U | 0.35 J | | | 0.45 J | 0.49 J | 0.46 J | 0.54 J | 0.64 | 0.4 U | 0.42 J | 0.59 J | 0.64 J | 0.67 J | 0.68 J | 0.7 J | 0.42 U | 0.71 J | 0.15 J | 0.073 J |
| SVOC | PHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PYRENE | MG/KG | 0.039 J | 0.68 J | | | 1.1 J | 0.97 J | 1.2 J | 1.3 J | 0.7 J | 0.4 UJ | 0.76 J | 1.2 J | 1.2 J | 1.2 J | 1.3 J | 1.4 J | 0.019 J | 1.1 J | 0.42 J | 0.23 J |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,3-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMOETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,4-DIOXANE (P-DIOXANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | ACETONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOFORM | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON DISULFIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON TETRACHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROFORM | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | ETHYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | ISOPROPYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ACETATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ETHYL KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYLCYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | STYRENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TETRACHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | VINYL CHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENE, O- | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES, M & P | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | | | | | | | | | | | | | | | | | | | | |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | KWDD0070 | KWDD0071 | KWDD0072 | KWDD0072 | KWDD0073 | KWDD0074 | KWDD0074 | KWDD0075 | KWDD0076 | KWDD0077 | KWDD0078 | KWDD0079 | KWDD0080 | KWDD0081 | KWDD0082 | KWDD0083 | KWDD0084 | KWDD0084 | KWDD0085 | KWDD0086 |
| | | Field Sample ID | KWDD0070-SD-AA-AB-0 | KWDD0071-SD-AA-AB-0 | KWDD0072-SD-AA-AB-0 | KWDD0072-SD-AA-AB-1 | KWDD0073-SD-AA-AB-0 | KWDD0074-SD-AA-AB-0 | KWDD0074-SD-AA-AB-1 | KWDD0075-SD-AA-AB-0 | KWDD0076-SD-AA-AB-0 | KWDD0077-SD-AA-AB-0 | KWDD0078-SD-AA-AB-0 | KWDD0079-SD-AA-AB-0 | KWDD0080-SD-AA-AB-0 | KWDD0081-SD-AA-AB-0 | KWDD0082-SD-AA-AB-0 | KWDD0083-SD-AA-AB-0 | KWDD0084-SD-AA-AB-0 | KWDD0084-SD-AA-AB-0-A | KWDD0085-SD-AA-AB-0 | KWDD0086-SD-AA-AB-0 |
| | | Sample Date | 10/18/07 | 10/18/07 | 10/18/07 | 10/18/07 | 10/18/07 | 10/18/07 | 10/18/07 | 10/18/07 | 10/18/07 | 10/22/07 | 10/22/07 | 10/22/07 | 10/22/07 | 10/22/07 | 10/22/07 | 10/22/07 | 10/22/07 | 3/17/11 | 10/22/07 | 10/22/07 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 1760 | 1020 | 14900 J | 17600 J | 13800 J | 16300 J | 20000 J | 23000 J | 2630 | 1890 | 1650 | 14300 J | 14700 J | 13200 J | 17000 J | 4930 J | 9240 J | 2580 J | 1370 | 1950 |
| METALS | ANTIMONY | MG/KG | 0.18 U | 0.24 J | 0.77 J | 2.5 J | 1.3 J | 1.3 J | 1.1 J | 0.88 J | 1.4 J | 0.93 UJ | 0.81 UJ | 3.6 UJ | 3.5 UJ | 2.7 UJ | 3.7 UJ | 2.3 UJ | 1.6 UJ | 8.6 UJ | 0.83 UJ | 1.1 UJ |
| METALS | ARSENIC | MG/KG | 8 J | 6.4 J | 78.2 J | 89.3 J | 81.1 J | 88.6 J | 105 J | 105 J | 14 J | 8.5 | 1.3 J | 78.3 J | 107 J | 140 J | 82.4 J | 22.4 J | 29.1 J | 6.2 J | 0.9 J | 4.2 |
| METALS | BARIUM | MG/KG | 32.2 J | 43.6 | 631 J | 745 J | 650 J | 700 J | 856 J | 936 J | 41.4 J | 41.7 J | 11.9 J | 631 J | 712 J | 869 J | 795 J | 198 J | 207 J | 41.2 J | 11.7 J | 22.3 J |
| METALS | BERYLLIUM | MG/KG | 0.065 J | 0.042 J | 0.67 J | 0.8 J | 0.68 J | 0.73 J | 0.89 J | 1.1 J | 0.28 J | 0.16 J | 0.05 U | 0.79 J | 0.89 J | 0.96 J | 0.99 J | 0.49 J | 1.1 J | 0.2 J | 0.19 J | 0.24 J |
| METALS | CADMIUM | MG/KG | 0.13 J | 0.45 J | R | R | R | R | R | R | R | 0.65 J | 0.1 U | 7.3 J | 8.4 J | 9 J | 8.3 J | 1.4 J | 2.2 J | 1 J | 0.41 J | 0.49 J |
| METALS | CALCIUM | MG/KG | 796 J | 556 J | 6110 J | 7260 J | 6640 J | 7090 J | 8390 J | 8380 J | 355 J | 522 J | 844 J | 5520 J | 7020 J | 4620 J | 6700 J | 4640 J | 2730 J | 2330 J | 1490 | 1140 J |
| METALS | CHROMIUM | MG/KG | 7.3 | 8.5 | 151 J | 179 J | 173 J | 188 J | 230 J | 245 J | 20.5 | 14.4 | 3.7 | 164 J | 175 J | 318 J | 178 J | 32.7 J | 49.4 J | 15.3 J | 7.2 | 9.8 |
| METALS | COBALT | MG/KG | 0.17 J | 0.79 J | 8.9 J | 10.8 J | 10.2 J | 10.5 J | 12.6 J | 12.2 J | 6.1 J | 0.96 J | 0.57 U | 7.7 J | 17.3 J | 9.4 J | 11.1 J | 5.6 J | 3.6 J | 2.9 J | 1.2 J | 1.5 J |
| METALS | COPPER | MG/KG | 1.8 J | 6.3 | 179 J | 213 J | 189 J | 212 J | 262 J | 287 J | 63.8 | R | R | R | R | R | R | R | R | 13.7 J | R | R |
| METALS | CYANIDE | MG/KG | 0.57 U | 0.6 U | 2.3 UJ | 2.1 UJ | 2.6 J | 2.5 UJ | 3.2 J | 2.7 J | 0.68 U | 0.04 U | 0.04 U | 2.4 J | 2.6 J | 3.6 J | 2.1 J | 0.46 J | 0.46 J | 1 UJ | 0.04 U | 0.05 U |
| METALS | IRON | MG/KG | 1430 | 1930 | 24600 J | 27700 J | 24400 J | 26700 J | 30700 J | 34900 J | 2640 | 3080 | 758 | 20100 J | 24500 J | 24600 J | 24000 J | 14400 J | 12000 J | 6800 J | 3850 | 6760 |
| METALS | LEAD | MG/KG | 38.4 | 72.9 | 1220 J | 1440 J | 1420 J | 1520 J | 1890 J | 1900 J | 282 | 192 | 8.3 | 1470 J | 1660 J | 2260 J | 1500 J | 203 J | 216 J | 44 J | 19.9 | 24.9 |
| METALS | MAGNESIUM | MG/KG | 49.5 J | 42.9 J | 1040 J | 1210 J | 913 J | 1130 J | 1290 J | 1580 J | 189 J | 257 J | 54 J | 822 J | 884 J | 880 J | 1290 J | 1220 J | 927 J | 840 J | 811 J | 483 J |
| METALS | MANGANESE | MG/KG | 6.6 | 18 | 177 J | 177 J | 160 J | 165 J | 185 J | 207 J | 6 | 8.8 | 5.4 | 107 J | 183 J | 164 J | 145 J | 73.6 J | 23.9 J | 16.1 J | 10.8 | 13.4 |
| METALS | MERCURY | MG/KG | 0.049 U | 0.055 U | 0.61 J | 0.7 J | 1.1 J | 0.45 J | 0.62 J | 0.77 J | 0.062 U | 0.07 U | 0.05 U | 0.68 J | 0.87 J | 0.74 J | 0.82 J | 0.17 UJ | 0.18 J | 0.053 J | 0.06 U | 0.07 U |
| METALS | NICKEL | MG/KG | 0.66 J | 1.4 J | 22.2 J | 26.3 J | 24 J | 26 J | 30.9 J | 32.6 J | 9.5 J | 2.7 J | 0.22 U | 22.5 J | 30.6 J | 21 J | 27.7 J | 12.3 J | 10.9 J | 6.6 J | 3.6 J | 4.2 J |
| METALS | POTASSIUM | MG/KG | 52.6 J | 36.8 J | 648 J | 731 J | 506 J | 730 J | 840 J | 931 J | 317 J | 551 J | 68.9 J | 662 J | 678 J | 881 J | 891 J | 584 J | 1070 J | 462 J | 347 J | 430 J |
| METALS | SELENIUM | MG/KG | 0.34 J | 0.43 J | 2 J | 2.9 J | 1.7 J | 4.5 J | 2.6 J | 2.9 J | 0.49 J | 1.3 UJ | 1.1 UJ | 4.9 UJ | 4.7 UJ | 3.6 UJ | 5 UJ | 3.1 UJ | 2.2 UJ | 5 UJ | 1.1 UJ | 1.5 UJ |
| METALS | SILVER | MG/KG | 0.062 U | 0.057 U | 0.82 J | 1 J | 0.63 J | 0.51 J | 1.1 J | 1.6 J | 0.099 J | 0.25 U | 0.22 U | 0.98 UJ | 1.1 J | 0.94 J | 1 UJ | 0.62 UJ | 0.43 UJ | 1.4 UJ | 0.23 U | 0.29 U |
| METALS | SODIUM | MG/KG | 13.2 J | 10.7 J | 213 J | 217 J | 187 J | 305 J | 244 J | 256 J | 23.7 J | 163 J | 157 J | 632 J | 624 J | 464 J | 597 J | 438 J | 294 J | 88.8 J | 204 J | 237 J |
| METALS | THALLIUM | MG/KG | 0.18 U | 0.17 U | 0.66 UJ | 0.63 UJ | 0.68 UJ | 0.75 UJ | 0.72 UJ | 0.75 UJ | 0.19 U | 1.4 U | 1.3 U | 5.6 UJ | 5.4 UJ | 4.1 UJ | 5.7 UJ | 3.5 UJ | 2.4 UJ | 3.6 UJ | 1.3 U | 1.7 U |
| METALS | VANADIUM | MG/KG | 4.7 J | 2.5 J | 21.3 J | 25.5 J | 21 J | 23.3 J | 28.5 J | 31.3 J | 5.2 J | 4.2 J | 2.6 J | 19.3 J | 20.4 J | 24.4 J | 22.3 J | 16.3 J | 24.3 J | 10.5 J | 4.7 J | 8.5 J |
| METALS | ZINC | MG/KG | 12 | 61.5 | 974 J | 1170 J | 1100 J | 1200 J | 1480 J | 1500 J | 190 | 147 | 2.8 J | 1150 J | 1360 J | 1010 J | 1270 J | 340 J | 285 J | 118 J | 42.7 | 73.6 |
| PEST/PCB | 4,4'-DDD | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDT | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1016 | MG/KG | 0.023 U | 0.021 U | 0.079 UJ | 0.079 UJ | 0.088 UJ | 0.093 UJ | 0.093 UJ | 0.093 UJ | 0.024 U | 0.047 U | 0.042 U | 0.18 UJ | 0.18 UJ | 0.14 UJ | 0.19 UJ | 0.12 UJ | 0.082 UJ | | 0.044 U | 0.058 U |
| PEST/PCB | AROCLOR-1221 | MG/KG | 0.023 U | 0.021 U | 0.079 UJ | 0.079 UJ | 0.088 UJ | 0.093 UJ | 0.093 UJ | 0.093 UJ | 0.024 U | 0.047 U | 0.042 U | 0.18 UJ | 0.18 UJ | 0.14 UJ | 0.19 UJ | 0.12 UJ | 0.082 UJ | | 0.044 U | 0.058 U |
| PEST/PCB | AROCLOR-1232 | MG/KG | 0.023 U | 0.021 U | 0.079 UJ | 0.079 UJ | 0.088 UJ | 0.093 UJ | 0.093 UJ | 0.093 UJ | 0.024 U | 0.047 U | 0.042 U | 0.18 UJ | 0.18 UJ | 0.14 UJ | 0.19 UJ | 0.12 UJ | 0.082 UJ | | 0.044 U | 0.058 U |
| PEST/PCB | AROCLOR-1242 | MG/KG | 0.023 U | 0.021 U | 0.079 UJ | 0.079 UJ | 0.088 UJ | 0.093 UJ | 0.093 UJ | 0.093 UJ | 0.024 U | 0.047 U | 0.042 U | 0.18 UJ | 0.18 UJ | 0.14 UJ | 0.19 UJ | 0.12 UJ | 0.082 UJ | | 0.044 U | 0.058 U |
| PEST/PCB | AROCLOR-1248 | MG/KG | 0.023 U | 0.021 U | 0.079 UJ | 0.079 UJ | 0.088 UJ | 0.093 UJ | 0.093 UJ | 0.093 UJ | 0.024 U | 0.047 U | 0.042 U | 0.18 UJ | 0.18 UJ | 0.14 UJ | 0.19 UJ | 0.12 UJ | 0.082 UJ | | 0.044 U | 0.058 U |
| PEST/PCB | AROCLOR-1254 | MG/KG | 0.023 U | 0.021 U | 0.2 J | 0.19 J | 0.27 J | 0.27 J | 0.29 J | 0.23 J | 0.024 U | 0.047 U | 0.042 U | 0.18 UJ | 0.18 UJ | 0.14 UJ | 0.19 UJ | 0.12 UJ | 0.082 UJ | | 0.044 U | 0.058 U |
| PEST/PCB | AROCLOR-1260 | MG/KG | 0.023 U | 0.021 U | 0.079 UJ | 0.079 UJ | 0.097 J | 0.1 J | 0.11 J | 0.093 UJ | 0.024 U | 0.047 U | 0.042 U | 0.18 UJ | 0.18 UJ | 0.14 UJ | 0.19 UJ | 0.12 UJ | 0.082 UJ | | 0.044 U | 0.058 U |
| PEST/PCB | AROCLOR-1262 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1268 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | BETA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DELTA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DIELDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN I | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN II | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | METHOXYCHLOR | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | TOXAPHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 1,1'-BIPHENYL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 1,2,4,5-TETRACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,3,4,6-TETRACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | ACENAPHTHENE | MG/KG | 0.46 UJ | 0.42 U | 1.6 UJ | 1.6 UJ | 1.7 UJ | 1.8 UJ | 1.8 UJ | 1.8 UJ | 0.47 U | 0.006 J | 0.42 U | 1.8 UJ | 1.8 UJ | 0.019 J | 1.9 UJ | 0.036 J | 0.14 J | | 3.5 J | 0.021 J |
| SVOC | ACENAPHTHYLENE | MG/KG | 0.46 U | 0.42 U | 0.08 J | 1.6 UJ | 0.095 J | 0.086 J | 0.11 J | 0.12 J | 0.47 U | 0.037 J | 0.42 U | 0.057 J | 0.069 J | 0.056 J | 0.079 J | 0.15 J | 0.51 J | | 4.3 U | 0.043 J |
| SVOC | ACETOPHENONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | ANTHRACENE | MG/KG | 0.46 U | 0.42 U | 0.12 J | 0.12 J | 0.14 J | 0.14 J | 0.18 J | 0.18 J | 0.47 U | 0.033 J | 0.42 U | 0.046 J | 0.049 J | 0.064 J | 0.057 J | 0.14 J | 0.41 J | | 4.4 | 0.062 J |
| SVOC | ATRAZINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.46 U | 0.019 J | 0.72 J | 0.75 J | 0.88 J | 0.83 J | 1 J | 1.1 J | 0.088 J | 0.15 J | 0.42 U | 0.16 J | 0.17 J | 0.2 J | 0.22 J | 0.5 J | 1.5 J | | 15 | 0.22 J |
| SVOC | BENZO(A)PYRENE | MG/KG | 0.46 U | 0.019 J | 0.92 J | 0.92 J | 1.1 J | 1.1 J | 1.2 J | 1.4 J | 0.085 J | 0.2 J | 0.42 U | 0.24 J | 0.24 J | 0.26 J | 0.33 J | 0.72 J | 1.9 J | | 11 | 0.32 J |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 0.46 U | 0.022 J | 1.4 J | 1.2 J | 1.6 J | 1.3 J | 2 J | 1.8 J | 0.13 J | 0.26 J | 0.42 U | 0.36 J | 0.35 J | 0.39 J | 0.45 J | 1.1 J | 2.2 J | | 15 | 0.44 J |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.46 U | 0.42 U | 0.44 J | 0.32 J | 0.48 J | 0.43 J | 0.37 J | 0.48 J | 0.035 J | 0.019 J | 0.42 U | 0.05 J | 1.8 UJ | 0.032 J | 0.038 J | 0.056 J | 0.24 J | | 1.2 J | 0.05 J |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.46 U | 0.035 J | 1.1 J | 1.6 J | 1.5 J | 1.6 J | 1.5 J | 1.8 J | 0.11 J | 0.25 J | 0.42 U | 0.33 J | 0.33 J | 0.37 J | 0.52 J | 1.1 J | 2.2 J | | 11 | 0.44 J |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | KWDD0070 | KWDD0071 | KWDD0072 | KWDD0072 | KWDD0073 | KWDD0074 | KWDD0074 | KWDD0075 | KWDD0076 | KWDD0077 | KWDD0078 | KWDD0079 | KWDD0080 | KWDD0081 | KWDD0082 | KWDD0083 | KWDD0084 | KWDD0084 | KWDD0085 | KWDD0086 |
| | | Field Sample ID | KWDD0070-SD-AA-AB-0 | KWDD0071-SD-AA-AB-0 | KWDD0072-SD-AA-AB-0 | KWDD0072-SD-AA-AB-1 | KWDD0073-SD-AA-AB-0 | KWDD0074-SD-AA-AB-0 | KWDD0074-SD-AA-AB-1 | KWDD0075-SD-AA-AB-0 | KWDD0076-SD-AA-AB-0 | KWDD0077-SD-AA-AB-0 | KWDD0078-SD-AA-AB-0 | KWDD0079-SD-AA-AB-0 | KWDD0080-SD-AA-AB-0 | KWDD0081-SD-AA-AB-0 | KWDD0082-SD-AA-AB-0 | KWDD0083-SD-AA-AB-0 | KWDD0084-SD-AA-AB-0 | KWDD0084-SD-AA-AB-0-A | KWDD0085-SD-AA-AB-0 | KWDD0086-SD-AA-AB-0 |
| | | Sample Date | 10/18/07 | 10/18/07 | 10/18/07 | 10/18/07 | 10/18/07 | 10/18/07 | 10/18/07 | 10/18/07 | 10/18/07 | 10/22/07 | 10/22/07 | 10/22/07 | 10/22/07 | 10/22/07 | 10/22/07 | 10/22/07 | 10/22/07 | 3/17/11 | 10/22/07 | 10/22/07 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | CAPROLACTAM | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | CARBAZOLE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | CHRYSENE | MG/KG | 0.46 U | 0.03 J | 1.2 J | 1.2 J | 1.4 J | 1.4 J | 1.6 J | 1.7 J | 0.11 J | 0.18 J | 0.42 U | 0.25 J | 0.26 J | 0.28 J | 0.32 J | 0.67 J | 2 J | | 14 | 0.28 J |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.46 U | 0.42 U | 0.12 J | 0.1 J | 0.15 J | 0.12 J | 0.099 J | 0.16 J | 0.47 U | 0.026 J | 0.42 U | 0.035 J | 0.048 J | 0.048 J | 0.057 J | 0.079 J | 0.29 J | | 1.4 J | 0.032 J |
| SVOC | DIBENZOFURAN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIMETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | FLUORANTHENE | MG/KG | 0.46 U | 0.052 J | 1.8 J | 1.8 J | 2.3 J | 2.4 J | 2.8 J | 2.8 J | 0.24 J | 0.3 J | 0.42 U | 0.38 J | 0.42 J | 0.41 J | 0.44 J | 1.1 J | 3 J | | 27 | 0.51 J |
| SVOC | FLUORENE | MG/KG | 0.46 U | 0.42 U | 1.6 UJ | 1.6 UJ | 1.7 UJ | 1.8 UJ | 1.8 UJ | 1.8 UJ | 0.47 U | 0.01 J | 0.42 U | 1.8 UJ | 0.023 J | 0.019 J | 0.023 J | 0.052 J | 0.19 J | | 2.7 J | 0.028 J |
| SVOC | HEXACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.46 U | 0.42 U | 0.44 J | 0.35 J | 0.48 J | 0.47 J | 0.42 J | 0.53 J | 0.037 J | 0.062 J | 0.42 U | 0.093 J | 0.1 J | 0.092 J | 0.11 J | 0.2 J | 0.65 J | | 3.2 J | 0.087 J |
| SVOC | ISOPHORONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | NAPHTHALENE | MG/KG | 0.46 U | 0.42 U | 1.6 UJ | 1.6 UJ | 1.7 UJ | 1.8 UJ | 1.8 UJ | 1.8 UJ | 0.47 U | 0.46 U | 0.42 U | 1.8 UJ | 1.8 UJ | 1.4 UJ | 1.9 UJ | 0.016 J | 0.063 J | | 0.077 J | 0.57 U |
| SVOC | NITROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PENTACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PHENANTHRENE | MG/KG | 0.46 U | 0.42 U | 0.67 J | 0.65 J | 0.86 J | 0.73 J | 0.89 J | 0.93 J | 0.068 J | 0.14 J | 0.42 U | 0.15 J | 0.16 J | 0.21 J | 0.22 J | 0.46 J | 1.6 J | | 18 | 0.25 J |
| SVOC | PHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PYRENE | MG/KG | 0.46 U | 0.04 J | 1.5 J | 1.4 J | 1.7 J | 1.6 J | 1.9 J | 2 J | 0.18 J | 0.29 J | 0.42 U | 0.3 J | 0.32 J | 0.37 J | 0.46 J | 0.76 J | 2.3 J | | 20 | 0.46 J |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,3-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMOETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,4-DIOXANE (P-DIOXANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | ACETONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOFORM | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON DISULFIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON TETRACHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROFORM | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | ETHYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | ISOPROPYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ACETATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ETHYL KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYLCYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | STYRENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TETRACHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | VINYL CHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENE, O- | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES, M & P | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | | | | | | | | | | | | | | | | | | | | |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | KWDD0087 | KWDD0088 | KWDD0089 | KWDD0089 | KWDD0090 | KWDD0090 | KWDD0091 | KWDD0092 | KWDD0092 | KWDD0092 | KWDD0093 | KWDD0094 | KWDD0094 | KWDD0095 | KWDD0096 | KWDD0097 | KWDD0098 | KWDD0098 | KWDD0099 | KWDD0100 |
| | | Field Sample ID | KWDD0087-SD-AA-AB-0 | KWDD0088-SD-AA-AB-0 | KWDD0089-SD-AA-AB-0 | KWDD0089-SD-AA-AB-0-A | KWDD0090-SD-AA-AB-0 | KWDD0090-SD-AA-AB-1 | KWDD0091-SD-AA-AB-0 | KWDD0092-SD-AA-AB-0 | KWDD0092-SD-AA-AB-0-A | KWDD0092-SD-AA-AB-1 | KWDD0093-SD-AA-AB-0 | KWDD0094-SD-AA-AB-0 | KWDD0094-SD-AA-AB-0-A | KWDD0095-SD-AA-AB-0 | KWDD0096-SD-AA-AB-0 | KWDD0097-SD-AA-AB-0 | KWDD0098-SD-AA-AB-0 | KWDD0098-SD-AA-AB-0-A | KWDD0099-SD-AA-AB-0 | KWDD0100-SD-AA-AB-0 |
| | | Sample Date | 10/23/07 | 10/23/07 | 10/23/07 | 3/16/11 | 10/23/07 | 10/23/07 | 10/23/07 | 10/23/07 | 3/16/11 | 10/23/07 | 10/23/07 | 10/23/07 | 3/16/11 | 10/23/07 | 10/23/07 | 10/30/07 | 10/30/07 | 3/17/11 | 10/30/07 | 10/30/07 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 2460 | 11000 J | 10800 J | 22700 J | 22800 J | 21000 J | 15500 J | 10000 J | 5570 J | 12000 J | 5890 J | 7800 J | 15700 J | 6460 J | 12300 J | 8540 | 3500 | 11800 J | 1730 | 10300 |
| METALS | ANTIMONY | MG/KG | 1.4 J | 3.9 UJ | 3.4 UJ | 32 UJ | 3.9 UJ | 3.9 UJ | 3.4 UJ | 2.2 UJ | 10.3 UJ | 2.1 UJ | 2.7 UJ | 2.5 UJ | 15.3 UJ | 2.1 UJ | 3.3 UJ | 2.5 UJ | 1.6 UJ | 1.8 J | 1.8 J | 3 UJ |
| METALS | ARSENIC | MG/KG | 10 J | 80 J | 103 J | 94.8 J | 101 J | 90 J | 98.7 J | 32.2 J | 14.2 J | 41 J | 37.5 J | 62.8 J | 90 JD | 61.6 J | 115 J | R | R | 57.7 J | R | R |
| METALS | BARIUM | MG/KG | 20.6 J | 591 J | 678 J | 802 J | 887 J | 808 J | 828 J | 377 J | 211 J | 429 J | 231 J | 454 J | 561 J | 360 J | 607 J | 504 J | 175 J | 470 J | 83.5 | 606 J |
| METALS | BERYLLIUM | MG/KG | 0.08 J | 0.65 J | 0.66 J | 0.55 J | 0.66 J | 0.62 J | 0.82 J | 0.44 J | 0.19 J | 0.5 J | 0.37 J | 0.5 J | 0.63 J | 0.42 J | 0.57 J | 0.42 J | 0.21 J | 0.35 J | 0.07 U | 0.6 J |
| METALS | CADMIUM | MG/KG | 0.61 J | 7 J | 8.5 J | 8.7 J | 8.6 J | 7.3 J | 9 J | 4.6 J | 2.4 J | 4.9 J | 4.1 J | 5.7 J | 6.2 J | 4.5 J | 7.2 J | 6.7 J | 2.4 J | 5.4 J | 1.5 J | 7.4 J |
| METALS | CALCIUM | MG/KG | 783 J | 5550 J | 5430 J | 7590 J | 6580 J | 5820 J | 5660 J | 1720 J | 850 J | 2490 J | 3730 J | 4700 J | 5060 J | 3730 J | 5150 J | 3880 J | 1320 J | 2910 J | 1300 J | 4880 J |
| METALS | CHROMIUM | MG/KG | 11.6 J | 157 J | 190 J | 237 JD | 199 J | 186 J | 202 J | 70.9 J | 29.4 J | 83.6 J | 36 J | 126 J | 146 JD | 105 J | 184 J | 133 J | 37.6 J | 92.1 J | 39.2 J | 172 J |
| METALS | COBALT | MG/KG | 0.69 U | 8 J | 9.7 J | 10.2 J | 9 J | 7.5 J | 10.1 J | 5.5 J | 3.9 J | 6.6 J | 6.7 J | 10 J | 10.5 J | 6.5 J | 10.1 J | 8.6 J | 5 J | 9.6 J | 1.1 J | 8.9 J |
| METALS | COPPER | MG/KG | 7.3 J | 155 J | 169 J | 270 J | 295 J | 275 J | 213 J | 129 J | 52.5 J | 152 J | 56.4 J | 107 J | 115 J | 111 J | 179 J | 134 J | 45.8 J | 147 J | 24.2 J | 150 J |
| METALS | CYANIDE | MG/KG | 0.05 U | 1.8 J | 2.5 J | 6.4 J | 3.8 J | 4.9 J | 3.5 J | 0.66 J | 1.1 UJ | 1.3 J | 0.13 UJ | 2.1 J | 3.5 J | 2.1 J | 6.7 J | 2.7 J | 0.45 J | 2 UJ | 0.32 J | 2.9 J |
| METALS | IRON | MG/KG | 2620 | 19400 J | 24000 J | 23800 J | 23400 J | 23000 J | 24300 J | 10800 J | 6280 J | 11700 J | 13600 J | 16800 J | 25200 J | 13100 J | 19000 J | 15500 J | 7200 J | 16900 J | 2280 | 19900 J |
| METALS | LEAD | MG/KG | 108 | 1400 J | 1700 J | 2030 JD | 1870 J | 1750 J | 1770 J | 684 J | 245 JD | 831 J | 400 J | 1170 J | 1070 JD | 989 J | 1750 J | 1330 J | 393 J | 885 JD | 332 | 1560 J |
| METALS | MAGNESIUM | MG/KG | 49.2 J | 725 J | 731 J | 911 J | 768 J | 705 J | 801 J | 356 J | 357 J | 463 J | 499 J | 567 J | 962 J | 447 J | 664 J | 465 J | 233 J | 536 J | 71.7 J | 628 J |
| METALS | MANGANESE | MG/KG | 5.8 | 134 J | 159 J | 130 J | 101 J | 93.1 J | 123 J | 29 J | 19.9 J | 37.6 J | 61.8 J | 92.7 J | 141 JD | 60.9 J | 106 J | 74.6 J | 23.5 J | 50.9 J | 14.5 | 123 J |
| METALS | MERCURY | MG/KG | 0.08 U | 0.6 J | 0.51 J | 0.73 J | 1.1 J | 0.84 J | 0.62 J | 0.62 J | 0.15 J | 0.44 J | 0.22 J | 0.58 J | 0.64 J | 0.26 J | 0.61 J | 0.5 J | 0.16 J | 0.63 J | 0.08 U | 0.57 J |
| METALS | NICKEL | MG/KG | 1.2 J | 20.8 J | 23.1 J | 26.3 J | 24.7 J | 21.8 J | 25.1 J | 13.4 J | 7.6 J | 16.3 J | 15.5 J | 17.9 J | 20.1 J | 14.9 J | 20.6 J | 18.4 J | 11.3 J | 19.1 J | 2.9 J | 20.6 J |
| METALS | POTASSIUM | MG/KG | 63 J | 510 J | 483 J | 627 J | 654 J | 573 J | 573 J | 374 J | 519 J | 491 J | 440 J | 474 J | 1110 J | 434 J | 571 J | 354 J | 282 J | 473 J | 118 J | 496 J |
| METALS | SELENIUM | MG/KG | 1.8 J | 5.3 UJ | 4.6 UJ | 18.7 UJ | 5.3 UJ | 5.9 J | 4.7 UJ | 4 J | 6 UJ | 2.8 UJ | 4.4 J | 3.4 UJ | 8.9 UJ | 2.9 UJ | 5.4 J | 3.4 UJ | 2.1 UJ | 11.7 UJ | 1.6 U | 4.1 UJ |
| METALS | SILVER | MG/KG | 0.27 U | 1.1 UJ | 0.92 UJ | 0.88 J | 1.2 J | 2.1 J | 0.94 UJ | 0.89 J | 0.35 J | 0.97 J | 0.74 UJ | 0.68 UJ | 2.5 UJ | 0.57 UJ | 0.89 UJ | 0.68 UJ | 0.43 UJ | 1.1 J | 0.33 U | 0.81 UJ |
| METALS | SODIUM | MG/KG | 213 J | 556 J | 1130 J | 158 J | 555 J | 540 J | 826 J | 655 J | 62.4 J | 284 J | 456 J | 600 J | 116 J | 302 J | 546 J | 366 J | 238 J | 102 J | 177 J | 473 J |
| METALS | THALLIUM | MG/KG | 1.5 UJ | 6 UJ | 5.2 UJ | 13.3 UJ | 6 UJ | 6 UJ | 5.3 UJ | 3.5 UJ | 0.38 J | 3.2 UJ | 4.2 UJ | 3.8 UJ | 6.4 UJ | 3.2 UJ | 5 UJ | 3.9 UJ | 2.4 UJ | 8.4 UJ | 1.9 UJ | 4.6 UJ |
| METALS | VANADIUM | MG/KG | 6.2 J | 16.6 J | 17.4 J | 28.1 J | 21.5 J | 20.8 J | 21.8 J | 11.2 J | 8.2 J | 12.9 J | 17.2 J | 14.9 J | 29.9 J | 12.7 J | 17.1 J | 12.9 J | 5.9 J | 18.1 J | 5.3 J | 16.7 J |
| METALS | ZINC | MG/KG | 66.5 | 960 J | 1120 J | 1400 JD | 1320 J | 1190 J | 1270 J | 558 J | 256 J | 776 J | 595 J | 859 J | 978 JD | 716 J | 1080 J | 943 J | 356 J | 766 JD | 169 J | 1040 J |
| PEST/PCB | 4,4'-DDD | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | 4,4'-DDT | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1016 | MG/KG | 0.05 U | 0.2 UJ | 0.17 UJ | | 0.2 UJ | 0.2 UJ | 0.18 UJ | 0.12 UJ | | 0.11 UJ | 0.14 UJ | 0.12 UJ | | 0.11 UJ | 0.17 UJ | 0.96 UJ | 0.62 UJ | | 0.45 U | 1.1 UJ |
| PEST/PCB | AROCLOR-1221 | MG/KG | 0.05 U | 0.2 UJ | 0.17 UJ | | 0.2 UJ | 0.2 UJ | 0.18 UJ | 0.12 UJ | | 0.11 UJ | 0.14 UJ | 0.12 UJ | | 0.11 UJ | 0.17 UJ | 0.96 UJ | 0.62 UJ | | 0.45 U | 1.1 UJ |
| PEST/PCB | AROCLOR-1232 | MG/KG | 0.05 U | 0.2 UJ | 0.17 UJ | | 0.2 UJ | 0.2 UJ | 0.18 UJ | 0.12 UJ | | 0.11 UJ | 0.14 UJ | 0.12 UJ | | 0.11 UJ | 0.17 UJ | 0.96 UJ | 0.62 UJ | | 0.45 U | 1.1 UJ |
| PEST/PCB | AROCLOR-1242 | MG/KG | 0.05 U | 0.2 UJ | 0.17 UJ | | 0.2 UJ | 0.2 UJ | 0.18 UJ | 0.12 UJ | | 0.11 UJ | 0.14 UJ | 0.12 UJ | | 0.11 UJ | 0.17 UJ | 0.96 UJ | 0.62 UJ | | 0.45 U | 1.1 UJ |
| PEST/PCB | AROCLOR-1248 | MG/KG | 0.05 U | 0.2 UJ | 0.17 UJ | | 0.2 UJ | 0.2 UJ | 0.18 UJ | 0.12 UJ | | 0.11 UJ | 0.14 UJ | 0.12 UJ | | 0.11 UJ | 0.17 UJ | 0.96 UJ | 0.62 UJ | | 0.45 U | 1.1 UJ |
| PEST/PCB | AROCLOR-1254 | MG/KG | 0.05 U | 0.2 UJ | 0.17 UJ | | 0.2 UJ | 0.2 UJ | 0.18 UJ | 0.12 UJ | | 0.11 UJ | 0.14 UJ | 0.12 UJ | | 0.11 UJ | 0.17 UJ | 0.96 UJ | 0.62 UJ | | 0.45 U | 1.1 UJ |
| PEST/PCB | AROCLOR-1260 | MG/KG | 0.05 U | 0.2 UJ | 0.17 UJ | | 0.2 UJ | 0.2 UJ | 0.18 UJ | 0.12 UJ | | 0.11 UJ | 0.14 UJ | 0.12 UJ | | 0.11 UJ | 0.17 UJ | 0.96 UJ | 0.62 UJ | | 0.45 U | 1.1 UJ |
| PEST/PCB | AROCLOR-1262 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1268 | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | BETA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DELTA-BHC | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | DIELDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN I | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN II | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | ENDRIN KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | METHOXYCHLOR | MG/KG | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | TOXAPHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 1,1'-BIPHENYL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 1,2,4,5-TETRACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,3,4,6-TETRACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-CHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 3-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-METHYLPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROANILINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | 4-NITROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | ACENAPHTHENE | MG/KG | 0.5 U | 2 UJ | 1.7 UJ | | 1.9 UJ | 1.9 UJ | 1.8 UJ | 1.1 UJ | | 1.1 UJ | 1.4 UJ | 0.013 J | | 0.017 J | 1.6 UJ | 1.3 UJ | 0.82 UJ | | 0.6 U | 1.5 UJ |
| SVOC | ACENAPHTHYLENE | MG/KG | 0.5 U | 0.062 J | 0.053 J | | 0.034 J | 0.03 J | 0.048 J | 0.023 J | | 0.018 J | 0.038 J | 0.053 J | | 0.082 J | 0.038 J | 0.036 J | 0.82 UJ | | 0.6 U | 0.024 J |
| SVOC | ACETOPHENONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | ANTHRACENE | MG/KG | 0.5 U | 0.046 J | 0.044 J | | 0.028 J | 0.023 J | 0.037 J | 0.022 J | | 0.016 J | 0.031 J | 0.045 J | | 0.058 J | 0.034 J | 0.034 J | 0.82 UJ | | 0.6 U | 0.03 J |
| SVOC | ATRAZINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZALDEHYDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.5 U | 0.16 J | 0.17 J | | 0.11 J | 0.083 J | 0.14 J | 0.068 J | | 0.05 J | 0.071 J | 0.14 J | | 0.17 J | 0.11 J | 0.12 J | 0.033 J | | 0.012 J | 0.12 J |
| SVOC | BENZO(A)PYRENE | MG/KG | 0.5 U | 0.21 J | 0.24 J | | 0.15 J | 0.11 J | 0.17 J | 0.099 J | | 0.076 J | 0.098 J | 0.2 J | | 0.24 J | 0.16 J | 0.12 J | 0.037 J | | 0.013 J | 0.12 J |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 0.009 J | 0.27 J | 0.34 J | | 0.18 J | 0.16 J | 0.26 J | 0.16 J | | 0.11 J | 0.18 J | 0.28 J | | 0.34 J | 0.21 J | 0.2 J | 0.048 J | | 0.016 J | 0.15 J |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.5 U | 0.022 J | 0.039 J | | 0.03 J | 0.029 J | 1.8 UJ | 1.1 UJ | | 0.02 J | 0.03 J | 0.028 J | | 0.032 J | 0.045 J | 0.015 J | 0.82 UJ | | 0.6 U | 1.5 UJ |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.009 J | 0.29 J | 0.38 J | | 0.23 J | 0.15 J | 0.3 J | 0.14 J | | 0.11 J | 0.18 J | 0.32 J | | 0.36 J | 0.2 J | 0.17 J | 0.049 J | | 0.016 J | 0.15 J |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | KWDD0087 | KWDD0088 | KWDD0089 | KWDD0089 | KWDD0090 | KWDD0090 | KWDD0091 | KWDD0092 | KWDD0092 | KWDD0092 | KWDD0093 | KWDD0094 | KWDD0094 | KWDD0095 | KWDD0096 | KWDD0097 | KWDD0098 | KWDD0098 | KWDD0099 | KWDD0100 |
| | | Field Sample ID | KWDD0087-SD-AA-AB-0 | KWDD0088-SD-AA-AB-0 | KWDD0089-SD-AA-AB-0 | KWDD0089-SD-AA-AB-0-A | KWDD0090-SD-AA-AB-0 | KWDD0090-SD-AA-AB-1 | KWDD0091-SD-AA-AB-0 | KWDD0092-SD-AA-AB-0 | KWDD0092-SD-AA-AB-0-A | KWDD0092-SD-AA-AB-1 | KWDD0093-SD-AA-AB-0 | KWDD0094-SD-AA-AB-0 | KWDD0094-SD-AA-AB-0-A | KWDD0095-SD-AA-AB-0 | KWDD0096-SD-AA-AB-0 | KWDD0097-SD-AA-AB-0 | KWDD0098-SD-AA-AB-0 | KWDD0098-SD-AA-AB-0-A | KWDD0099-SD-AA-AB-0 | KWDD0100-SD-AA-AB-0 |
| | | Sample Date | 10/23/07 | 10/23/07 | 10/23/07 | 3/16/11 | 10/23/07 | 10/23/07 | 10/23/07 | 10/23/07 | 3/16/11 | 10/23/07 | 10/23/07 | 10/23/07 | 3/16/11 | 10/23/07 | 10/23/07 | 10/30/07 | 10/30/07 | 3/17/11 | 10/30/07 | 10/30/07 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | CAPROLACTAM | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | CARBAZOLE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | CHRYSENE | MG/KG | 0.01 J | 0.22 J | 0.25 J | | 0.17 J | 0.13 J | 0.2 J | 0.095 J | | 0.079 J | 0.13 J | 0.19 J | | 0.24 J | 0.17 J | 0.18 J | 0.047 J | | 0.019 J | 0.16 J |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.5 U | 0.035 J | 0.056 J | | 0.024 J | 0.027 J | 0.035 J | 1.1 UJ | | 0.012 J | 1.4 UJ | 0.023 J | | 0.028 J | 0.036 J | 0.028 J | 0.012 J | | 0.6 U | 1.5 UJ |
| SVOC | DIBENZOFURAN | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DIMETHYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | FLUORANTHENE | MG/KG | 0.013 J | 0.34 J | 0.37 J | | 0.25 J | 0.2 J | 0.33 J | 0.15 J | | 0.12 J | 0.16 J | 0.31 J | | 0.41 J | 0.26 J | 0.28 J | 0.072 J | | 0.032 J | 0.29 J |
| SVOC | FLUORENE | MG/KG | 0.5 U | 0.022 J | 0.022 J | | 1.9 UJ | 1.9 UJ | 0.018 J | 1.1 UJ | | 1.1 UJ | 1.4 UJ | 0.016 J | | 0.031 J | 0.017 J | 1.3 UJ | 0.82 UJ | | 0.6 U | 1.5 UJ |
| SVOC | HEXACHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | HEXACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.006 J | 0.1 J | 0.1 J | | 0.064 J | 0.058 J | 0.073 J | 0.043 J | | 0.032 J | 0.039 J | 0.068 J | | 0.07 J | 0.074 J | 0.061 J | 0.023 J | | 0.6 U | 0.062 J |
| SVOC | ISOPHORONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | NAPHTHALENE | MG/KG | 0.5 U | 2 UJ | 1.7 UJ | | 1.9 UJ | 1.9 UJ | 1.8 UJ | 1.1 UJ | | 1.1 UJ | 1.4 UJ | 1.2 UJ | | 0.012 J | 1.6 UJ | 1.3 UJ | 0.82 UJ | | 0.6 U | 1.5 UJ |
| SVOC | NITROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PENTACHLOROPHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PHENANTHRENE | MG/KG | 0.007 J | 0.2 J | 0.14 J | | 0.11 J | 0.095 J | 0.14 J | 0.049 J | | 0.043 J | 0.086 J | 0.16 J | | 0.22 J | 0.11 J | 0.11 J | 0.027 J | | 0.014 J | 0.15 J |
| SVOC | PHENOL | MG/KG | | | | | | | | | | | | | | | | | | | | |
| SVOC | PYRENE | MG/KG | 0.015 J | 0.31 J | 0.3 J | | 0.21 J | 0.16 J | 0.24 J | 0.12 J | | 0.1 J | 0.14 J | 0.26 J | | 0.34 J | 0.22 J | 0.21 J | 0.053 J | | 0.026 J | 0.2 J |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,1-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,3-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DIBROMOETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,4-DIOXANE (P-DIOXANE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 2-HEXANONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | ACETONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOFORM | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMOMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON DISULFIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CARBON TETRACHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROFORM | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | CYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | DICHLOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | ETHYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | ISOPROPYLBENZENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ACETATE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL ETHYL KETONE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYLCYCLOHEXANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | STYRENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TETRACHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TOLUENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | VINYL CHLORIDE | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENE, O- | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES, M & P | MG/KG | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/KG | | | | | | | | | | | | | | | | | | | | |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | SL | SL | SL | SL | SL | SL | SL | SL | SL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | KWDD0100 | KWDD0101 | KWDD0102 | KWDD0103 | KWDD0104 | KWDD0105 | KWDD0105 | KWDD0105 | KWDD0106 | KWDD0107 | KWDD0112 | SLDD0001 | SLDD0002 | SLDD0003 | SLDD0004 | SLDD0005 | SLDD0006 | SLDD0007 | SLDD0008 | SLDD0008 |
| | | Field Sample ID | KWDD0100-SD-AA-AB-0-A | KWDD0101-SD-AA-AB-0 | KWDD0102-SD-AA-AB-0 | KWDD0103-SD-AA-AB-0 | KWDD0104-SD-AA-AB-0 | KWDD0105-SD-AA-AB-0_A | KWDD0105-SD-AA-AB-0 | KWDD0105-SD-AA-AB-1 | KWDD0106-SD-AA-AB-0 | KWDD0107-SD-AA-AB-0 | KWDD0112-SD-AA-AB-0 | SLDD0001-SD-AA-AB-0 | SLDD0002-SD-AA-AB-0 | SLDD0003-SD-AA-AB-0 | SLDD0004-SD-AA-AB-0 | SLDD0005-SD-AA-AB-0 | SLDD0006-SD-AA-AB-0 | SLDD0007-SD-AA-AB-0 | SLDD0008-SD-AA-AB-0 | SLDD0008-SD-AA-AB-1 |
| | | Sample Date | 3/16/11 | 10/30/07 | 10/30/07 | 10/30/07 | 10/30/07 | 6/26/08 | 10/30/07 | 10/30/07 | 10/30/07 | 10/30/07 | 6/23/08 | 10/19/09 | 10/19/09 | 10/19/09 | 10/19/09 | 10/19/09 | 10/19/09 | 10/20/09 | 10/20/09 | 10/20/09 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 17500 J | 5940 | 2020 | 2560 | 10900 | 12400 J | 9500 | 11000 | 10400 | 1090 | 1090 | 1870 | 2010 | 1340 | 1730 | 2760 | 3640 | 573 | 1220 J | 2040 J |
| METALS | ANTIMONY | MG/KG | 18.9 UJ | 2.1 UJ | 1.4 J | 0.83 U | 8 J | 2.6 J | 6.2 J | 4.4 J | 3 J | 1.1 U | 1.2 J | 6.5 UJ | 0.84 J | 6.4 UJ | 6.8 UJ | 3 J | 0.88 J | 5.9 U | 6.2 U | 5.5 U |
| METALS | ARSENIC | MG/KG | 72.9 J | R | R | R | R | 104 J | R | R | R | R | 4.1 J | 2.1 J | 4.6 J | 3.3 J | 1.5 J | 6.3 J | 14.7 J | 1.5 | 1.1 | 1.3 |
| METALS | BARIUM | MG/KG | 686 J | 296 J | 83.1 J | 71.5 | 269 J | 626 J | 226 J | 280 J | 615 J | 31.2 J | 6.4 J | 22 U | 47.4 | 28.4 | 23 U | 69.7 | 152 | 39.4 | 21 U | 18 U |
| METALS | BERYLLIUM | MG/KG | 0.63 J | 0.37 J | 0.29 J | 0.13 J | 0.45 J | 0.64 J | 0.7 J | 0.73 J | 0.62 J | 0.07 U | 0.07 J | 0.54 U | 0.093 J | 0.53 U | 0.56 U | 0.23 J | 0.1 J | 0.49 U | 0.51 U | 0.45 U |
| METALS | CADMIUM | MG/KG | 5.9 J | 3.6 J | 0.91 J | 0.37 J | 4.6 J | 8.4 J | 8.1 J | 8.9 J | 6 J | 0.14 U | 0.1 J | 0.11 J | 0.64 | 0.12 J | 0.56 U | 0.41 J | 0.31 J | 0.49 U | 0.51 U | 0.45 U |
| METALS | CALCIUM | MG/KG | 5180 J | 2790 J | 1220 J | 483 J | 11500 J | 5610 J | 7000 J | 8330 J | 2750 J | 1500 J | 165 J | 217 J | 1150 | 422 J | 206 J | 952 | 739 | 928 | 93.8 J | 158 J |
| METALS | CHROMIUM | MG/KG | 132 JD | 90.3 J | 25.6 J | 11.9 J | 97.5 J | 190 J | 523 J | 700 J | 322 J | 6.8 J | 5.3 | 11.8 | 13.5 | 11 | 9 | 15.4 | 17.9 | 2.5 | 4.8 | 6.7 |
| METALS | COBALT | MG/KG | 8.8 J | 5.8 J | 1.6 J | 1.4 J | 4.9 J | 11.6 J | 4.2 J | 3 J | 2.7 J | 0.78 U | 0.33 J | 1.6 J | 11.9 | 0.31 J | 0.47 J | 11.1 | 2.4 J | 0.62 J | 5.1 U | 0.18 J |
| METALS | COPPER | MG/KG | 168 J | 75 J | 16.7 J | 24.6 J | 200 J | 176 J | 118 J | 155 J | 111 J | 3.4 J | 4.1 J | 21.7 J | 125 J | 6.7 J | 4.7 J | 199 J | 26.1 J | 4.6 | 1 J | 1.6 J |
| METALS | CYANIDE | MG/KG | 3.1 J | 2.4 J | 1.1 J | 0.25 J | 0.22 UJ | 3.8 J | 17.6 J | 8.9 J | 6.9 J | 0.05 U | 0.54 U | 0.25 J | 0.26 J | 0.26 J | 0.076 J | 0.16 J | 5.5 | 3.6 U | 3.1 U | 3 U |
| METALS | IRON | MG/KG | 21700 J | 12400 J | 7530 J | 6820 | 49500 J | 17900 J | 13900 J | 14500 J | 13700 J | 10500 | 3410 | 4360 | 6290 | 2750 | 4170 | 8630 | 9390 | 1760 | 2300 J | 4130 J |
| METALS | LEAD | MG/KG | 1060 JD | 800 J | 205 J | 74.3 | 1060 J | 1750 J | 2520 J | 3540 J | 6360 J | 34.1 | 19.5 | 83.2 J | 302 J | 147 J | 12.9 J | 378 J | 285 J | 25.3 | 3.1 | 4.7 |
| METALS | MAGNESIUM | MG/KG | 922 J | 424 J | 160 J | 244 J | 783 J | 668 J | 543 J | 564 J | 519 J | 57.2 J | 37.9 J | 80 J | 622 | 74.5 J | 35.3 J | 422 J | 200 J | 58.7 J | 22.5 J | 35.7 J |
| METALS | MANGANESE | MG/KG | 78.6 J | 84.1 J | 27 J | 19.5 | 49.3 J | 82 J | 50.3 J | 42.9 J | 40.5 J | 8.7 | 8.5 | 26.1 | 78.2 | 35.2 | 27.8 | 78.4 | 54.2 | 105 | 13.2 J | 20.5 J |
| METALS | MERCURY | MG/KG | 0.76 J | 0.27 J | 0.12 J | 0.08 J | 0.45 J | 0.78 J | 0.3 J | 0.33 J | 0.4 J | 0.07 U | 0.053 U | 0.15 | 0.24 | 0.14 J | 0.14 U | 0.12 J | 0.51 | 0.041 J | 0.032 J | 0.13 U |
| METALS | NICKEL | MG/KG | 19.6 J | 11.3 J | 4.3 J | 3.2 J | 24.5 J | 23 J | 12.8 J | 12.3 J | 11.7 J | 2.1 J | 1.3 J | 0.85 J | 4.8 | 0.86 J | 0.92 J | 5.9 J | 4 J | 0.75 J | 0.39 J | 0.65 J |
| METALS | POTASSIUM | MG/KG | 931 J | 491 J | 282 J | 337 J | 489 J | 501 J | 635 J | 701 J | 613 J | 99 J | 49.2 J | 161 J | 176 J | 107 J | 103 J | 211 J | 337 J | 41.8 J | 97.6 J | 114 J |
| METALS | SELENIUM | MG/KG | 11 UJ | 2.8 UJ | 1.8 UJ | 1.1 U | 6.4 UJ | 2.5 J | 4.9 UJ | 4.5 UJ | 3.5 UJ | 1.5 U | 0.53 J | 3.8 UJ | 3.2 UJ | 3.7 UJ | 3.9 UJ | 6 UJ | 3.8 UJ | 3.5 U | 3.6 U | 3.2 U |
| METALS | SILVER | MG/KG | 3.1 UJ | 0.57 UJ | 0.36 UJ | 0.23 U | 1.3 UJ | R | 0.98 UJ | 0.89 UJ | 0.7 UJ | 0.31 U | R | 1.1 U | 0.2 J | 1.1 U | 1.1 U | 1.7 U | 1.1 U | 0.99 U | 1 U | 0.91 U |
| METALS | SODIUM | MG/KG | 118 J | 332 J | 222 J | 131 J | 705 J | 103 J | 575 J | 523 J | 497 J | 168 J | 7 J | 17.9 J | 61.8 J | 18.5 J | 18.8 J | 59.3 J | 40.7 J | 39.3 J | 14.8 J | 18.9 J |
| METALS | THALLIUM | MG/KG | 7.9 UJ | 3.2 UJ | 2 UJ | 1.3 UJ | 7.3 UJ | 0.78 UJ | 5.6 UJ | 5 UJ | 4 UJ | 1.7 U | 0.18 U | 2.7 U | 2.3 U | 2.7 U | 2.8 U | 4.3 U | 2.7 U | 2.5 U | 2.6 U | 2.3 U |
| METALS | VANADIUM | MG/KG | 31.7 J | 11.1 J | 5.4 J | 9.1 J | 30.6 J | 19.6 J | 24.3 J | 25.1 J | 25 J | 3.8 J | 4.1 J | 9.4 | 11.8 | 4.4 J | 5.9 | 12 | 15.6 | 2.2 J | 4.1 J | 6.2 |
| METALS | ZINC | MG/KG | 917 JD | 550 J | 161 J | 98.9 J | 807 J | 1200 J | 737 J | 636 J | 298 J | 13.5 J | 14.4 J | 30.5 | 181 | 68.1 | 5.2 J | 172 | 149 | 12.6 | 1.6 J | 3.4 J |
| PEST/PCB | 4,4'-DDD | MG/KG | | | | | | | | | | | | 0.0044 U | 0.0062 J | 0.0048 U | 0.0048 U | 0.004 J | 0.025 J | 0.0052 U | 0.0042 U | 0.0043 U |
| PEST/PCB | 4,4'-DDE | MG/KG | | | | | | | | | | | | 0.0044 U | 0.014 J | 0.0048 U | 0.0048 U | 0.0072 | 0.0049 J | 0.0052 U | 0.0042 U | 0.0043 U |
| PEST/PCB | 4,4'-DDT | MG/KG | | | | | | | | | | | | 0.0044 U | 0.0099 J | 0.0048 U | 0.0048 U | 0.0064 U | 0.0042 J | 0.0052 U | 0.0042 U | 0.0043 U |
| PEST/PCB | ALDRIN | MG/KG | | | | | | | | | | | | 0.0023 U | 0.0028 U | 0.0025 U | 0.0025 U | 0.0033 U | 0.0026 U | 0.0027 U | 0.0022 U | 0.0022 U |
| PEST/PCB | ALPHA-BHC | MG/KG | | | | | | | | | | | | 0.0023 U | 0.0028 U | 0.0025 U | 0.0025 U | 0.0033 U | 0.0026 U | 0.0027 U | 0.0022 U | 0.0022 U |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | | | | | | | | | | | | 0.0023 U | 0.0028 U | 0.0025 U | 0.0025 U | 0.0033 U | 0.0026 U | 0.0027 U | 0.0022 U | 0.0022 U |
| PEST/PCB | AROCLOR-1016 | MG/KG | | 0.79 UJ | 0.5 UJ | 0.33 U | 1.8 UJ | | 1.4 UJ | 1.2 UJ | 1 UJ | 0.44 U | | 0.044 U | 0.055 U | 0.048 U | 0.048 U | 0.064 U | 0.05 U | 0.052 U | 0.042 U | 0.043 U |
| PEST/PCB | AROCLOR-1221 | MG/KG | | 0.79 UJ | 0.5 UJ | 0.33 U | 1.8 UJ | | 1.4 UJ | 1.2 UJ | 1 UJ | 0.44 U | | 0.044 U | 0.055 U | 0.048 U | 0.048 U | 0.064 U | 0.05 U | 0.052 U | 0.042 U | 0.043 U |
| PEST/PCB | AROCLOR-1232 | MG/KG | | 0.79 UJ | 0.5 UJ | 0.33 U | 1.8 UJ | | 1.4 UJ | 1.2 UJ | 1 UJ | 0.44 U | | 0.044 U | 0.055 U | 0.048 U | 0.048 U | 0.064 U | 0.05 U | 0.052 U | 0.042 U | 0.043 U |
| PEST/PCB | AROCLOR-1242 | MG/KG | | 0.79 UJ | 0.5 UJ | 0.33 U | 1.8 UJ | | 1.4 UJ | 1.2 UJ | 1 UJ | 0.44 U | | 0.044 U | 0.055 U | 0.048 U | 0.048 U | 0.064 U | 0.05 U | 0.052 U | 0.042 U | 0.043 U |
| PEST/PCB | AROCLOR-1248 | MG/KG | | 0.79 UJ | 0.5 UJ | 0.33 U | 1.8 UJ | | 1.4 UJ | 1.2 UJ | 1 UJ | 0.44 U | | 0.044 U | 0.055 U | 0.048 U | 0.048 U | 0.064 U | 0.05 U | 0.052 U | 0.042 U | 0.043 U |
| PEST/PCB | AROCLOR-1254 | MG/KG | | 0.79 UJ | 0.5 UJ | 0.33 U | 1.8 UJ | | 1.4 UJ | 1.2 UJ | 1 UJ | 0.44 U | | 0.044 U | 0.23 | 0.048 U | 0.048 U | 0.17 | 0.05 U | 0.052 U | 0.042 U | 0.043 U |
| PEST/PCB | AROCLOR-1260 | MG/KG | | 0.79 UJ | 0.5 UJ | 0.33 U | 1.8 UJ | | 1.4 UJ | 1.2 UJ | 1 UJ | 0.44 U | | 0.044 U | 0.061 J | 0.048 U | 0.048 U | 0.043 J | 0.051 | 0.052 U | 0.042 U | 0.043 U |
| PEST/PCB | AROCLOR-1262 | MG/KG | | | | | | | | | | | | 0.044 U | 0.055 U | 0.048 U | 0.048 U | 0.064 U | 0.05 U | 0.052 U | 0.042 U | 0.043 U |
| PEST/PCB | AROCLOR-1268 | MG/KG | | | | | | | | | | | | 0.044 U | 0.055 U | 0.048 U | 0.048 U | 0.064 U | 0.05 U | 0.052 U | 0.042 U | 0.043 U |
| PEST/PCB | BETA-BHC | MG/KG | | | | | | | | | | | | 0.0023 U | 0.0028 U | 0.0025 U | 0.0025 U | 0.0033 U | 0.0026 U | 0.0027 U | 0.0022 U | 0.0022 U |
| PEST/PCB | DELTA-BHC | MG/KG | | | | | | | | | | | | 0.0023 U | 0.0021 J | 0.0025 U | 0.0025 U | 0.0033 U | 0.0026 U | 0.0027 U | 0.0022 U | 0.0022 U |
| PEST/PCB | DIELDRIN | MG/KG | | | | | | | | | | | | 0.0044 U | 0.0055 U | 0.0048 U | 0.0048 U | 0.0064 U | 0.005 U | 0.0052 U | 0.0042 U | 0.0043 U |
| PEST/PCB | ENDOSULFAN I | MG/KG | | | | | | | | | | | | 0.0023 U | 0.0028 U | 0.0025 U | 0.0025 U | 0.0033 U | 0.0026 U | 0.0027 U | 0.0022 U | 0.0022 U |
| PEST/PCB | ENDOSULFAN II | MG/KG | | | | | | | | | | | | 0.0044 U | 0.0055 U | 0.0048 U | 0.0048 U | 0.0064 U | 0.005 U | 0.0052 U | 0.0042 U | 0.0043 U |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | | | | | | | | | | | | 0.0044 U | R | 0.0048 U | 0.0048 U | 0.0064 U | 0.005 U | 0.0052 U | 0.0042 U | 0.0043 U |
| PEST/PCB | ENDRIN | MG/KG | | | | | | | | | | | | 0.0044 U | 0.0059 | 0.0048 U | 0.0048 U | 0.0064 U | 0.005 U | 0.0052 U | 0.0042 U | 0.0043 U |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | | | | | | | | | | | | 0.0044 U | 0.0092 J | 0.0048 U | 0.0048 U | 0.0064 U | 0.005 U | 0.0052 U | 0.0042 UJ | 0.016 J |
| PEST/PCB | ENDRIN KETONE | MG/KG | | | | | | | | | | | | 0.0044 U | R | 0.0048 U | 0.0048 U | 0.0064 U | 0.005 U | 0.0052 U | 0.0042 U | 0.0043 U |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | | | | | | | | | | | | 0.0023 U | 0.0028 U | 0.0025 U | 0.0025 U | 0.0033 U | 0.0026 U | 0.0027 U | 0.0022 U | 0.0022 U |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | | | | | | | | | | | | 0.0023 U | R | 0.0025 U | 0.0025 U | 0.0033 U | 0.0026 U | 0.0027 U | 0.0022 U | 0.0022 U |
| PEST/PCB | HEPTACHLOR | MG/KG | | | | | | | | | | | | 0.0023 U | 0.0028 U | 0.0025 U | 0.0025 U | 0.0033 U | 0.0026 U | 0.0027 U | 0.0022 U | 0.0022 U |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | | | | | | | | | | | | 0.0023 U | 0.0028 U | 0.0025 U | 0.0025 U | 0.0033 U | 0.0026 U | 0.0027 U | 0.0022 U | 0.0022 U |
| PEST/PCB | METHOXYCHLOR | MG/KG | | | | | | | | | | | | 0.023 U | 0.028 U | 0.025 U | 0.025 U | 0.033 U | 0.026 U | 0.027 U | 0.022 U | 0.022 U |
| PEST/PCB | TOXAPHENE | MG/KG | | | | | | | | | | | | 0.23 U | 0.28 U | 0.25 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | 1,1'-BIPHENYL | MG/KG | | | | | | | | | | | | 0.051 J | 0.3 J | 0.24 U | 0.25 U | 0.35 | 0.26 U | 0.27 U | 0.22 U | 0.22 UJ |
| SVOC | 1,2,4,5-TETRACHLOROBENZENE | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | 2,3,4,6-TETRACHLOROPHENOL | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | 2,4-DINITROPHENOL | MG/KG | | | | | | | | | | | | 0.44 U | 0.71 U | 0.46 U | 0.48 U | 0.64 U | 0.49 U | 0.52 U | 0.44 U | 0.43 U |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | 2-CHLOROPHENOL | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | | | | | | | | | | | | 0.0046 | 0.1 J | 0.0014 J | 0.0048 U | 0.33 U | 0.0064 | 0.0052 U | 0.0044 U | 0.0043 U |
| SVOC | 2-METHYLPHENOL | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | 2-NITROANILINE | MG/KG | | | | | | | | | | | | 0.44 U | 0.71 U | 0.46 U | 0.48 U | 0.64 U | 0.49 U | 0.52 U | 0.44 U | 0.43 U |
| SVOC | 2-NITROPHENOL | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | 3-NITROANILINE | MG/KG | | | | | | | | | | | | 0.44 U | 0.71 U | 0.46 U | 0.48 U | 0.64 U | 0.49 U | 0.52 U | 0.44 U | 0.43 U |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | | | | | | | | | | | | 0.44 U | 0.71 U | 0.46 U | 0.48 U | 0.64 U | 0.49 U | 0.52 U | 0.44 U | 0.43 U |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | 4-CHLOROANILINE | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 UJ | 0.27 UJ | 0.22 U | 0.22 U |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | 4-METHYLPHENOL | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | 4-NITROANILINE | MG/KG | | | | | | | | | | | | 0.44 U | 0.71 U | 0.46 U | 0.48 U | 0.64 U | 0.49 U | 0.52 U | 0.44 U | 0.43 U |
| SVOC | 4-NITROPHENOL | MG/KG | | | | | | | | | | | | 0.44 U | 0.71 U | 0.46 U | 0.48 U | 0.64 U | 0.49 U | 0.52 U | 0.44 U | 0.43 U |
| SVOC | ACENAPHTHENE | MG/KG | | 0.016 J | 0.009 J | 0.005 J | 2.4 UJ | | 1.8 UJ | 1.6 UJ | 1.4 UJ | 0.59 U | | 0.0069 | 0.9 | 0.0021 J | 0.0048 U | 0.14 J | 0.0087 | 0.0052 U | 0.0044 U | 0.0043 UJ |
| SVOC | ACENAPHTHYLENE | MG/KG | | 0.032 J | 0.052 J | 0.015 J | 2.4 UJ | | 1.8 UJ | 1.6 UJ | 0.017 J | 0.59 U | | 0.0022 J | 0.044 J | 0.0029 J | 0.0048 U | 0.33 U | 0.0065 | 0.0052 U | 0.0044 U | 0.0043 UJ |
| SVOC | ACETOPHENONE | MG/KG | | | | | | | | | | | | 0.22 U | 0.055 J | 0.24 U | 0.25 U | 0.054 J | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | ANTHRACENE | MG/KG | | 0.038 J | 0.038 J | 0.018 J | 2.4 UJ | | 1.8 UJ | 1.6 UJ | 0.016 J | 0.59 U | | 0.012 | 2.4 | 0.0056 | 0.0048 U | 0.21 J | 0.027 J | 0.0052 U | 0.0044 U | 0.0043 UJ |
| SVOC | ATRAZINE | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | BENZALDEHYDE | MG/KG | | | | | | | | | | | | 0.22 U | 0.1 J | 0.24 U | 0.25 U | 0.11 J | 0.058 J | 0.27 U | 0.22 U | 0.22 U |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | | 0.14 J | 0.12 J | 0.056 J | 0.085 J | | 0.036 J | 0.022 J | 0.068 J | 0.59 U | | 0.095 J | 9.8 | 0.033 J | 0.0069 | 1.1 J | 0.13 J | 0.0092 | 0.006 | 0.0045 J |
| SVOC | BENZO(A)PYRENE | MG/KG | | 0.14 J | 0.14 J | 0.051 J | 0.079 J | | 0.044 J | 0.023 J | 0.084 J | 0.59 U | | 0.12 J | 11 | 0.035 J | 0.011 | 1.3 | 0.15 J | 0.013 | 0.014 | 0.011 J |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | | 0.2 J | 0.18 J | 0.074 J | 0.12 J | | 0.061 J | 0.028 J | 0.12 J | 0.006 J | | 0.13 J | 15 | 0.029 J | 0.012 | 2.8 J | 0.14 J | 0.016 | 0.013 | 0.0098 J |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | | 0.018 J | 0.016 J | 0.44 U | 2.4 UJ | | 1.8 UJ | 1.6 UJ | 1.4 UJ | 0.59 U | | 0.12 J | 4.2 J | 0.019 | 0.0089 | 0.37 J | 0.091 J | 0.015 | 0.01 | 0.007 J |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | | 0.23 J | 0.17 J | 0.069 J | 0.12 J | | 0.062 J | 0.031 J | 0.14 J | 0.006 J | | 0.16 J | 16 | 0.036 J | 0.0088 | 0.33 U | 0.18 J | 0.012 | 0.0097 | 0.0075 J |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | | | | | | | | | | | | 0.031 J | 0.37 U | 0.034 J | 0.032 J | 0.032 J | 0.036 J | 0.27 U | 0.023 J | 0.22 UJ |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 U |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | KWL | SL | SL | SL | SL | SL | SL | SL | SL | SL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | KWDD0100 | KWDD0101 | KWDD0102 | KWDD0103 | KWDD0104 | KWDD0105 | KWDD0105 | KWDD0105 | KWDD0106 | KWDD0107 | KWDD0112 | SLDD0001 | SLDD0002 | SLDD0003 | SLDD0004 | SLDD0005 | SLDD0006 | SLDD0007 | SLDD0008 | SLDD0008 |
| | | Field Sample ID | KWDD0100-SD-AA-AB-0-A | KWDD0101-SD-AA-AB-0 | KWDD0102-SD-AA-AB-0 | KWDD0103-SD-AA-AB-0 | KWDD0104-SD-AA-AB-0 | KWDD0105-SD-AA-AB-0_A | KWDD0105-SD-AA-AB-0 | KWDD0105-SD-AA-AB-1 | KWDD0106-SD-AA-AB-0 | KWDD0107-SD-AA-AB-0 | KWDD0112-SD-AA-AB-0 | SLDD0001-SD-AA-AB-0 | SLDD0002-SD-AA-AB-0 | SLDD0003-SD-AA-AB-0 | SLDD0004-SD-AA-AB-0 | SLDD0005-SD-AA-AB-0 | SLDD0006-SD-AA-AB-0 | SLDD0007-SD-AA-AB-0 | SLDD0008-SD-AA-AB-0 | SLDD0008-SD-AA-AB-1 |
| | | Sample Date | 3/16/11 | 10/30/07 | 10/30/07 | 10/30/07 | 10/30/07 | 6/26/08 | 10/30/07 | 10/30/07 | 10/30/07 | 10/30/07 | 6/23/08 | 10/19/09 | 10/19/09 | 10/19/09 | 10/19/09 | 10/19/09 | 10/19/09 | 10/20/09 | 10/20/09 | 10/20/09 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | | | | | | | | | | | | 0.22 U | 3.2 | 0.24 U | 0.25 U | 0.41 U | 0.26 U | 0.27 U | 0.22 U | 0.22 UJ |
| SVOC | CAPROLACTAM | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 UJ | 0.22 U |
| SVOC | CARBAZOLE | MG/KG | | | | | | | | | | | | 0.22 U | 2.2 | 0.24 U | 0.25 U | 0.042 J | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | CHRYSENE | MG/KG | | 0.18 J | 0.17 J | 0.069 J | 0.12 J | | 0.056 J | 0.035 J | 0.1 J | 0.006 J | | 0.17 J | 14 | 0.03 | 0.01 | 1.5 J | 0.18 J | 0.013 | 0.011 | 0.0082 J |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | | 0.024 J | 0.017 J | 0.011 J | 2.4 UJ | | 1.8 UJ | 1.6 UJ | 1.4 UJ | 0.59 U | | 0.032 | 1.4 | 0.0083 | 0.003 J | 0.15 J | 0.027 J | 0.0036 J | 0.0037 J | 0.0021 J |
| SVOC | DIBENZOFURAN | MG/KG | | | | | | | | | | | | 0.22 U | 0.42 | 0.24 U | 0.25 U | 0.049 J | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | DIETHYLPHTHALATE | MG/KG | | | | | | | | | | | | 0.031 J | 0.37 U | 0.026 J | 0.025 J | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 UJ |
| SVOC | DIMETHYLPHTHALATE | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 UJ |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.081 J | 0.026 J | 0.22 UJ |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | | | | | | | | | | | | 0.22 U | 0.057 J | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 UJ |
| SVOC | FLUORANTHENE | MG/KG | | 0.35 J | 0.29 J | 0.14 J | 0.18 J | | 0.093 J | 0.049 J | 0.19 J | 0.59 U | | 0.29 | 41 | 0.076 J | 0.016 | 2.7 J | 0.3 | 0.028 | 0.024 | 0.015 J |
| SVOC | FLUORENE | MG/KG | | 0.015 J | 0.02 J | 0.008 J | 2.4 UJ | | 1.8 UJ | 1.6 UJ | 1.4 UJ | 0.59 U | | 0.0094 | 1 | 0.0028 J | 0.0048 U | 0.11 J | 0.0091 | 0.0052 U | 0.0044 U | 0.0043 UJ |
| SVOC | HEXACHLOROBENZENE | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | | | | | | | | | | | | 0.22 UJ | 0.37 UJ | 0.24 UJ | 0.25 UJ | 0.33 UJ | 0.26 UJ | 0.27 UJ | 0.22 U | 0.22 U |
| SVOC | HEXACHLOROETHANE | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | | 0.05 J | 0.048 J | 0.022 J | 0.039 J | | 1.8 UJ | 1.6 UJ | 0.033 J | 0.59 U | | 0.095 J | 4.1 | 0.023 | 0.0094 | 0.4 | 0.038 J | 0.012 | 0.011 | 0.0071 J |
| SVOC | ISOPHORONE | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | NAPHTHALENE | MG/KG | | 1 UJ | 0.66 UJ | 0.44 U | 2.4 UJ | | 1.8 UJ | 1.6 UJ | 1.4 UJ | 0.59 U | | 0.0093 | 0.12 J | 0.0045 U | 0.0048 U | 0.039 J | 0.0079 | 0.0052 U | 0.0044 U | 0.0043 UJ |
| SVOC | NITROBENZENE | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | PENTACHLOROPHENOL | MG/KG | | | | | | | | | | | | 0.0055 J | 0.71 U | 0.0093 U | 0.0097 U | 0.64 U | 0.01 UJ | 0.011 UJ | 0.0088 U | 0.0087 UJ |
| SVOC | PHENANTHRENE | MG/KG | | 0.17 J | 0.18 J | 0.074 J | 0.056 J | | 0.042 J | 0.024 J | 0.074 J | 0.59 U | | 0.1 J | 15 | 0.04 J | 0.0045 J | 0.91 | 0.13 J | 0.013 | 0.005 | 0.0033 J |
| SVOC | PHENOL | MG/KG | | | | | | | | | | | | 0.22 U | 0.37 U | 0.24 U | 0.25 U | 0.33 U | 0.26 U | 0.27 U | 0.22 U | 0.22 U |
| SVOC | PYRENE | MG/KG | | 0.25 J | 0.24 J | 0.11 J | 0.14 J | | 0.072 J | 0.037 J | 0.14 J | 0.59 U | | 0.22 J | 16 | 0.064 J | 0.014 | 1.3 J | 0.23 J | 0.017 | 0.014 | 0.011 J |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | 1,1-DICHLOROETHANE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | 1,1-DICHLOROETHENE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | 1,2,3-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | R | R | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | R | R | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | R | R | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | 1,2-DIBROMOETHANE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | R | R | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | 1,2-DICHLOROETHANE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | R | R | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | R | R | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | 1,4-DIOXANE (P-DIOXANE) | MG/KG | | | | | | | | | | | | R | R | R | R | R | R | R | R | R |
| VOC | 2-HEXANONE | MG/KG | | | | | | | | | | | | 0.015 U | 0.021 U | 0.016 U | 0.014 U | 0.024 U | 0.018 U | 0.027 U | 0.0095 U | 0.01 U |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | | | | | | | | | | | | 0.015 U | 0.021 U | 0.016 U | 0.014 U | 0.024 U | 0.018 U | 0.027 U | 0.0095 U | 0.01 U |
| VOC | ACETONE | MG/KG | | | | | | | | | | | | 0.023 | 0.096 | 0.1 | 0.024 | 0.12 | 0.096 | 0.14 | 0.011 | 0.018 |
| VOC | BENZENE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | BROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | BROMODICHLOROMETHANE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | BROMOFORM | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | R | R | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | BROMOMETHANE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | CARBON DISULFIDE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0031 J | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | CARBON TETRACHLORIDE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | CHLOROBENZENE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | CHLOROETHANE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | CHLOROFORM | MG/KG | | | | | | | | | | | | 0.0073 U | 0.0064 J | 0.0081 U | 0.0072 U | 0.012 U | 0.0058 J | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | CHLOROMETHANE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | CYCLOHEXANE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | DICHLOROMETHANE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | ETHYLBENZENE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | ISOPROPYLBENZENE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | METHYL ACETATE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | METHYL ETHYL KETONE | MG/KG | | | | | | | | | | | | 0.0085 J | 0.037 | 0.049 | 0.0097 J | 0.05 | 0.037 | 0.053 | 0.0095 U | 0.0069 J |
| VOC | METHYLCYCLOHEXANE | MG/KG | | | | | | | | | | | | 0.0032 J | 0.025 | 0.0081 U | 0.0072 U | 0.041 | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | STYRENE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | TETRACHLOROETHENE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | TOLUENE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | VINYL CHLORIDE | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | XYLENE, O- | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | XYLENES, M & P | MG/KG | | | | | | | | | | | | 0.0073 U | 0.01 U | 0.0081 U | 0.0072 U | 0.012 U | 0.0089 U | 0.014 U | 0.0048 U | 0.0052 U |
| VOC | XYLENES (TOTAL) | MG/KG | | | | | | | | | | | | | | | | | | | | |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | SLDD0009 | SLDD0010 | SLDD0011 | SLDD0012 | SLDD0013 | SLDD0014 | SLDD0015 | SLDD0016 | SLDD0017 | SLDD0018 | SLDD0019 | SLDD0019 | SLDD0020 | SLDD0021 | SLDD0022 | SLDD0023 | SLDD0024 | SLDD0025 | SLDD0026 | SLDD0027 |
| | | Field Sample ID | SLDD0009-SD-AA-AB-0 | SLDD0010-SD-AA-AB-0 | SLDD0011-SD-AA-AB-0 | SLDD0012-SD-AA-AB-0 | SLDD0013-SD-AA-AB-0 | SLDD0014-SD-AA-AB-0 | SLDD0015-SD-AA-AB-0 | SLDD0016-SD-AA-AB-0 | SLDD0017-SD-AA-AB-0 | SLDD0018-SD-AA-AB-0 | SLDD0019-SD-AA-AB-0 | SLDD0019-SD-AA-AB-1 | SLDD0020-SD-AA-AB-0 | SLDD0021-SD-AA-AB-0 | SLDD0022-SD-AA-AB-0 | SLDD0023-SD-AA-AB-0 | SLDD0024-SD-AA-AB-0 | SLDD0025-SD-AA-AB-0 | SLDD0026-SD-AA-AB-0 | SLDD0027-SD-AA-AB-0 |
| | | Sample Date | 10/20/09 | 10/20/09 | 10/20/09 | 10/20/09 | 10/20/09 | 10/20/09 | 10/20/09 | 10/20/09 | 10/21/09 | 10/21/09 | 10/21/09 | 10/21/09 | 10/21/09 | 10/21/09 | 10/21/09 | 10/21/09 | 10/21/09 | 10/21/09 | 10/22/09 | 10/22/09 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/KG | 10900 J | 3390 J | 1030 | 2180 | 2530 J | 1280 | 362 | 385 | 1360 | 121 | 3040 J | 5620 J | 344 | 2170 | 745 | 1470 | 4680 | 890 | 2940 J | 4120 |
| METALS | ANTIMONY | MG/KG | 1.6 J | 3.6 J | 7.4 U | 1.2 J | 13.2 UJ | 5.4 U | 5.9 U | 6.1 U | 5.4 UJ | 5.5 UJ | 18.1 UJ | 21.4 UJ | 6.4 UJ | 9.3 UJ | 6 UJ | 5.7 UJ | 1.2 J | 6.9 UJ | 1.7 J | 1.5 J |
| METALS | ARSENIC | MG/KG | 28.1 J | 13 J | 2.5 | 8 | 6.3 J | 0.7 J | 0.68 J | 0.89 J | 0.72 J | 0.92 UJ | 6.5 J | 12.8 J | 0.95 J | 6.9 J | 1 UJ | 0.95 UJ | 10 J | 1.6 J | 14.8 J | 12.2 |
| METALS | BARIUM | MG/KG | 312 J | 115 J | 26 U | 227 | 97.2 J | 18 U | 20 U | 20 U | 4.2 J | 3.9 J | 137 J | 143 J | 6.5 J | 8.7 J | 5.5 J | 4 J | 71.4 | 4.8 J | 206 J | 134 |
| METALS | BERYLLIUM | MG/KG | 0.64 J | 0.25 J | 0.61 U | 0.12 J | 0.29 J | 0.45 U | 0.49 U | 0.51 U | 0.46 U | 0.46 U | 1.5 UJ | 1.8 UJ | 0.53 U | 0.77 U | 0.5 U | 0.47 U | 0.83 U | 0.58 U | 0.85 UJ | 0.85 U |
| METALS | CADMIUM | MG/KG | 1.3 J | 0.97 J | 0.61 U | 1.4 | 0.94 J | 0.45 U | 0.49 U | 0.51 U | 0.45 U | 0.46 U | 0.76 J | 1.7 J | 0.067 J | 0.1 J | 0.5 U | 0.068 J | 0.54 J | 0.58 U | 0.39 J | 1.1 |
| METALS | CALCIUM | MG/KG | 3710 J | 1990 J | 238 J | 1880 | 2830 J | 121 J | 94.9 J | 260 J | 123 J | 109 J | 5020 J | 4660 J | 3540 | 97.3 J | 96.7 J | 475 U | 1650 | 44.4 J | 2140 J | 3930 |
| METALS | CHROMIUM | MG/KG | 52.5 J | 14.4 J | 4.3 | 32.5 | 21.3 J | 4.3 | 1.8 | 1.9 | 6 | 5.7 | 16.7 J | 28 J | 1.3 | 6.2 | 3.4 | 4.7 | 17.7 | 4.4 | 29.3 J | 20.7 |
| METALS | COBALT | MG/KG | 8 J | 15.1 J | 0.92 J | 4.3 J | 2 J | 4.5 U | 4.9 U | 0.43 J | 0.15 J | 4.6 U | 5 J | 12.3 J | 0.52 J | 1.1 J | 0.15 J | 4.7 U | 3.4 J | 0.39 J | 6.1 J | 7.1 J |
| METALS | COPPER | MG/KG | 227 J | 81.8 J | 7.8 | 21.1 | 29.1 J | 0.34 J | 0.59 J | 1.6 J | 1.2 J | 0.68 J | 17 J | 48.4 J | 1.9 J | 9.8 | 0.84 J | 1.1 J | 19.5 | 1.5 J | 360 J | 94.1 |
| METALS | CYANIDE | MG/KG | 7.9 J | 0.23 J | 3.9 U | 2.5 J | 0.27 J | 2.8 U | 3.3 U | 3.2 U | 3 U | 2.7 U | 0.24 J | 0.28 J | 0.07 J | 0.2 J | 3.1 U | 3.3 U | 0.2 J | 0.21 J | 0.13 J | 0.82 J |
| METALS | IRON | MG/KG | 22000 J | 11000 J | 2710 | 7940 | 6140 J | 1310 | 562 | 1370 | 3170 | 158 | 7020 J | 13400 J | 1010 | 3130 | 399 | 231 | 10000 | 2580 | 10200 J | 14800 |
| METALS | LEAD | MG/KG | 1630 J | 445 J | 25.9 | 445 | 137 J | 3.1 | 5.4 | 9.2 | 3.5 | 3.6 | 104 J | 257 J | 9.3 | 96.3 | 4 | 4.2 | 181 | 10 | 378 J | 640 |
| METALS | MAGNESIUM | MG/KG | 624 J | 231 J | 59.7 J | 603 | 209 J | 24.5 J | 11 J | 27.9 J | 44.8 J | 460 U | 353 J | 412 J | 2010 | 60.2 J | 27.7 J | 18.3 J | 591 J | 27.4 J | 499 J | 699 J |
| METALS | MANGANESE | MG/KG | 211 J | 154 J | 64 | 112 | 71.7 J | 9.3 | 12 | 22 | 7.1 | 4.4 | 87.9 J | 125 J | 19.1 | 8.5 | 5.9 | 4 | 24.1 | 3.7 | 108 J | 397 |
| METALS | MERCURY | MG/KG | 0.67 J | 0.096 J | 0.14 U | 0.16 | 0.092 J | 0.097 U | 0.097 U | 0.094 U | 0.25 | 0.098 U | 0.22 J | 0.1 J | 0.1 U | 0.13 | 0.1 U | 0.069 J | 0.17 J | 0.1 U | 0.096 J | 0.34 |
| METALS | NICKEL | MG/KG | 7.8 J | 8.7 J | 1.1 J | 9.5 | 3.8 J | 0.46 J | 4 U | 0.53 J | 0.73 J | 0.3 J | 3.7 J | 7.9 J | 0.43 J | 1.3 J | 0.85 J | 0.33 J | 4 J | 0.32 J | 14.4 J | 11.3 |
| METALS | POTASSIUM | MG/KG | 626 J | 238 J | 60.1 J | 279 J | 150 J | 70.2 J | 57.1 J | 42.1 J | 125 J | 26.2 J | 150 J | 279 J | 24.6 J | 112 J | 51.3 J | 133 J | 422 J | 105 J | 353 J | 254 J |
| METALS | SELENIUM | MG/KG | 8.4 UJ | 11.2 UJ | 4.3 U | 3.8 U | 7.7 UJ | 3.1 U | 3.5 U | 3.5 U | 3.2 UJ | 3.2 UJ | 1.5 J | 2.1 J | 3.7 UJ | 5.4 UJ | 3.5 UJ | 3.3 UJ | 0.75 J | 4 UJ | 5.8 UJ | 1.1 J |
| METALS | SILVER | MG/KG | 2.4 UJ | 3.2 UJ | 1.2 U | 1.1 U | 2.2 UJ | 0.9 U | 0.99 U | 1 U | 0.9 U | 0.92 U | 3 J | 3.6 UJ | 1.1 U | 1.5 U | 1 U | 0.95 U | 1.7 U | 1.2 U | 1.7 UJ | 1.7 U |
| METALS | SODIUM | MG/KG | 258 J | 157 J | 22.4 J | 92.9 J | 182 J | 17.4 J | 11.2 J | 17.4 J | 74.9 J | 8.1 J | 156 J | 194 J | 16.5 J | 29.4 J | 499 U | 21.7 J | 106 J | 30.4 J | 110 J | 82.6 J |
| METALS | THALLIUM | MG/KG | 6 UJ | 8 UJ | 3.1 U | 2.7 U | 5.5 UJ | 2.2 U | 2.5 U | 2.5 U | 2.3 U | 2.3 U | 7.6 UJ | 8.9 J | 2.7 U | 3.9 U | 2.5 U | 2.4 U | 4.2 U | 2.9 U | 4.2 UJ | 0.31 J |
| METALS | VANADIUM | MG/KG | 26.6 J | 21.3 J | 3.2 J | 12.6 | 6.8 J | 4 J | 1.1 J | 2.1 J | 4.7 | 0.62 J | 9.7 J | 21.2 J | 1.6 J | 5.9 J | 2.1 J | 3.6 J | 17.2 | 4.4 J | 11.1 J | 29.5 |
| METALS | ZINC | MG/KG | 372 J | 216 J | 13.4 | 179 | 60.5 J | 0.59 J | 2.4 J | 7.2 | 1.9 J | 3.2 J | 95 J | 241 J | 9.5 | 19.1 | 3.1 J | 0.99 J | 112 | 7.4 | 161 J | 255 |
| PEST/PCB | 4,4'-DDD | MG/KG | 0.0093 U | 0.012 UJ | 0.0055 U | 0.038 | 0.01 U | 0.0042 U | 0.0045 U | 0.0045 U | 0.0044 UJ | 0.0039 UJ | 0.012 UJ | 0.013 UJ | 0.0044 UJ | 0.0056 UJ | 0.0045 UJ | 0.0043 UJ | 0.014 J | 0.0045 UJ | 0.007 UJ | R |
| PEST/PCB | 4,4'-DDE | MG/KG | 0.0093 U | 0.012 UJ | 0.0055 U | 0.0071 | 0.01 U | 0.0042 U | 0.0045 U | 0.0045 U | 0.0044 UJ | 0.0039 UJ | 0.012 UJ | 0.013 UJ | 0.0044 UJ | 0.0056 UJ | 0.0045 UJ | 0.0043 UJ | 0.013 J | 0.0045 UJ | 0.007 UJ | 0.0044 J |
| PEST/PCB | 4,4'-DDT | MG/KG | 0.0093 U | 0.0082 J | 0.0055 U | 0.034 | 0.01 U | 0.0042 U | 0.0045 U | 0.0045 U | 0.0044 UJ | 0.0039 UJ | 0.012 UJ | 0.013 UJ | 0.0044 UJ | 0.0056 UJ | 0.0045 UJ | 0.0043 UJ | 0.0084 J | 0.0045 UJ | 0.007 UJ | 0.0061 UJ |
| PEST/PCB | ALDRIN | MG/KG | 0.0048 U | 0.0062 UJ | 0.0028 U | 0.0031 U | 0.0052 U | 0.0021 U | 0.0023 U | 0.0023 U | 0.0022 UJ | 0.002 UJ | 0.0061 UJ | 0.0068 UJ | 0.0023 UJ | 0.0029 UJ | 0.0023 UJ | 0.0022 UJ | 0.0031 UJ | 0.0023 UJ | 0.0036 UJ | 0.0031 UJ |
| PEST/PCB | ALPHA-BHC | MG/KG | 0.0048 U | 0.0062 UJ | 0.0028 U | 0.0031 U | 0.0052 U | 0.0021 U | 0.0023 U | 0.0023 U | 0.0022 UJ | 0.002 UJ | 0.0061 UJ | 0.0068 UJ | 0.0023 UJ | 0.0029 UJ | 0.0023 UJ | 0.0022 UJ | 0.0031 UJ | 0.0023 UJ | 0.0036 UJ | 0.0031 UJ |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | 0.0048 U | 0.0062 UJ | 0.0028 U | 0.0031 U | 0.0052 U | 0.0021 U | 0.0023 U | 0.0023 U | 0.0022 UJ | 0.002 UJ | 0.0061 UJ | 0.0068 UJ | 0.0023 UJ | 0.0029 UJ | 0.0023 UJ | 0.0022 UJ | 0.009 J | 0.0023 UJ | 0.0036 UJ | 0.0031 UJ |
| PEST/PCB | AROCLOR-1016 | MG/KG | 0.093 U | 0.12 UJ | 0.055 U | 0.06 U | 0.1 U | 0.042 U | 0.045 U | 0.045 U | 0.044 UJ | 0.039 UJ | 0.12 UJ | 0.13 UJ | 0.044 UJ | 0.056 UJ | 0.045 UJ | 0.043 UJ | 0.06 U | 0.045 U | 0.07 U | 0.061 UJ |
| PEST/PCB | AROCLOR-1221 | MG/KG | 0.093 U | 0.12 UJ | 0.055 U | 0.06 U | 0.1 U | 0.042 U | 0.045 U | 0.045 U | 0.044 UJ | 0.039 UJ | 0.12 UJ | 0.13 UJ | 0.044 UJ | 0.056 UJ | 0.045 UJ | 0.043 UJ | 0.06 U | 0.045 U | 0.07 U | 0.061 UJ |
| PEST/PCB | AROCLOR-1232 | MG/KG | 0.093 U | 0.12 UJ | 0.055 U | 0.06 U | 0.1 U | 0.042 U | 0.045 U | 0.045 U | 0.044 UJ | 0.039 UJ | 0.12 UJ | 0.13 UJ | 0.044 UJ | 0.056 UJ | 0.045 UJ | 0.043 UJ | 0.06 U | 0.045 U | 0.07 U | 0.061 UJ |
| PEST/PCB | AROCLOR-1242 | MG/KG | 0.093 U | 0.12 UJ | 0.055 U | 0.06 U | 0.1 U | 0.042 U | 0.045 U | 0.045 U | 0.044 UJ | 0.039 UJ | 0.12 UJ | 0.13 UJ | 0.044 UJ | 0.056 UJ | 0.045 UJ | 0.043 UJ | 0.06 U | 0.045 U | 0.07 U | 0.061 UJ |
| PEST/PCB | AROCLOR-1248 | MG/KG | 0.093 U | 0.12 UJ | 0.055 U | 0.06 U | 0.1 U | 0.042 U | 0.045 U | 0.045 U | 0.044 UJ | 0.039 UJ | 0.12 UJ | 0.13 UJ | 0.044 UJ | 0.056 UJ | 0.045 UJ | 0.043 UJ | 0.06 U | 0.045 U | 0.07 U | 0.061 UJ |
| PEST/PCB | AROCLOR-1254 | MG/KG | 0.093 U | 0.063 J | 0.055 U | 0.06 U | 0.1 U | 0.042 U | 0.045 U | 0.045 U | 0.044 UJ | 0.039 UJ | 0.12 UJ | 0.13 UJ | 0.044 UJ | 0.056 UJ | 0.045 UJ | 0.043 UJ | 0.06 U | 0.045 U | 0.07 U | 0.094 J |
| PEST/PCB | AROCLOR-1260 | MG/KG | 0.093 U | 0.12 UJ | 0.055 U | 0.06 U | 0.1 U | 0.042 U | 0.045 U | 0.045 U | 0.044 UJ | 0.039 UJ | 0.12 UJ | 0.13 UJ | 0.044 UJ | 0.056 UJ | 0.045 UJ | 0.043 UJ | 0.04 J | 0.045 U | 0.07 U | 0.1 J |
| PEST/PCB | AROCLOR-1262 | MG/KG | 0.093 U | 0.12 UJ | 0.055 U | 0.06 U | 0.1 U | 0.042 U | 0.045 U | 0.045 U | 0.044 UJ | 0.039 UJ | 0.12 UJ | 0.13 UJ | 0.044 UJ | 0.056 UJ | 0.045 UJ | 0.043 UJ | 0.06 U | 0.045 U | 0.07 U | 0.061 UJ |
| PEST/PCB | AROCLOR-1268 | MG/KG | 0.093 U | 0.12 UJ | 0.055 U | 0.06 U | 0.1 U | 0.042 U | 0.045 U | 0.045 U | 0.044 UJ | 0.039 UJ | 0.12 UJ | 0.13 UJ | 0.044 UJ | 0.056 UJ | 0.045 UJ | 0.043 UJ | 0.06 U | 0.045 U | 0.07 U | 0.061 UJ |
| PEST/PCB | BETA-BHC | MG/KG | 0.0048 U | 0.0062 UJ | 0.0028 U | 0.0031 U | 0.0052 U | 0.0021 U | 0.0023 U | 0.0023 U | 0.0022 UJ | 0.002 UJ | 0.0061 UJ | 0.0068 UJ | 0.0023 UJ | 0.0029 UJ | 0.0023 UJ | 0.0022 UJ | 0.0031 UJ | 0.0023 UJ | 0.0036 UJ | 0.0031 UJ |
| PEST/PCB | DELTA-BHC | MG/KG | 0.0048 U | 0.0062 UJ | 0.0028 U | 0.0031 U | 0.0052 U | 0.0021 U | 0.0023 U | 0.0023 U | 0.0022 UJ | 0.002 UJ | 0.0061 UJ | 0.0068 UJ | 0.0023 UJ | 0.0029 UJ | 0.0023 UJ | 0.0022 UJ | 0.0031 UJ | 0.0023 UJ | 0.0036 UJ | 0.0031 UJ |
| PEST/PCB | DIELDRIN | MG/KG | 0.0093 U | 0.012 UJ | 0.0055 U | 0.006 U | 0.01 U | 0.0042 U | 0.0045 U | 0.0045 U | 0.0044 UJ | 0.0039 UJ | 0.012 UJ | 0.013 UJ | 0.0044 UJ | 0.0056 UJ | 0.0045 UJ | 0.0043 UJ | 0.006 UJ | 0.0045 UJ | 0.007 UJ | 0.0061 UJ |
| PEST/PCB | ENDOSULFAN I | MG/KG | 0.0048 U | 0.0062 UJ | 0.0028 U | 0.0031 U | 0.0052 U | 0.0021 U | 0.0023 U | 0.0023 U | 0.0022 UJ | 0.002 UJ | 0.0061 UJ | 0.0068 UJ | 0.0023 UJ | 0.0029 UJ | 0.0023 UJ | 0.0022 UJ | 0.0031 UJ | 0.0023 UJ | 0.0036 UJ | 0.0031 UJ |
| PEST/PCB | ENDOSULFAN II | MG/KG | 0.0093 U | 0.012 UJ | 0.0055 U | 0.006 U | 0.01 U | 0.0042 U | 0.0045 U | 0.0045 U | 0.0044 UJ | 0.0039 UJ | 0.012 UJ | 0.013 UJ | 0.0044 UJ | 0.0056 UJ | 0.0045 UJ | 0.0043 UJ | 0.006 UJ | 0.0045 UJ | 0.007 UJ | 0.0061 UJ |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | 0.0093 U | 0.012 UJ | 0.0055 U | 0.006 U | 0.01 U | 0.0042 U | 0.0045 U | 0.0045 U | 0.0044 UJ | 0.0039 UJ | 0.012 UJ | 0.013 UJ | 0.0044 UJ | 0.0056 UJ | 0.0045 UJ | 0.0043 UJ | 0.006 UJ | 0.0045 UJ | 0.007 UJ | 0.0061 UJ |
| PEST/PCB | ENDRIN | MG/KG | 0.0093 U | 0.012 UJ | 0.0055 U | 0.006 U | 0.01 U | 0.0042 U | 0.0045 U | 0.0045 U | 0.0044 UJ | 0.0039 UJ | 0.012 UJ | 0.013 UJ | 0.0044 UJ | 0.0056 UJ | 0.0045 UJ | 0.0043 UJ | 0.006 UJ | 0.0045 UJ | 0.007 UJ | 0.0061 UJ |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | 0.0093 U | 0.012 UJ | 0.0055 U | 0.006 U | 0.01 U | 0.0042 U | 0.0045 U | 0.0045 U | 0.0044 UJ | 0.0039 UJ | 0.012 UJ | 0.013 UJ | 0.0044 UJ | 0.0056 UJ | 0.0045 UJ | 0.0043 UJ | 0.006 UJ | 0.0045 UJ | 0.007 UJ | 0.0061 UJ |
| PEST/PCB | ENDRIN KETONE | MG/KG | 0.0093 U | 0.012 UJ | 0.0055 U | 0.006 U | 0.01 U | 0.0042 U | 0.0045 U | 0.0045 U | 0.0044 UJ | 0.0039 UJ | 0.012 UJ | 0.013 UJ | 0.0044 UJ | 0.0056 UJ | 0.0045 UJ | 0.0043 UJ | 0.006 UJ | 0.0045 UJ | 0.007 UJ | 0.0061 UJ |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | 0.0048 U | 0.0062 UJ | 0.0028 U | 0.0031 U | 0.0052 U | 0.0021 U | 0.0023 U | 0.0023 U | 0.0022 UJ | 0.002 UJ | 0.0061 UJ | 0.0068 UJ | 0.0023 UJ | 0.0029 UJ | 0.0023 UJ | 0.0022 UJ | 0.0031 UJ | 0.0023 UJ | 0.0036 UJ | 0.0031 UJ |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | 0.0048 U | 0.0062 UJ | 0.0028 U | 0.0031 U | 0.0052 U | 0.0021 U | 0.0023 U | 0.0023 U | 0.0022 UJ | 0.002 UJ | 0.0061 UJ | 0.0068 UJ | 0.0023 UJ | 0.0029 UJ | 0.0023 UJ | 0.0022 UJ | R | 0.0023 UJ | 0.0036 UJ | 0.0031 UJ |
| PEST/PCB | HEPTACHLOR | MG/KG | 0.0048 U | 0.0062 UJ | 0.0028 U | 0.0031 U | 0.0052 U | 0.0021 U | 0.0023 U | 0.0023 U | 0.0022 UJ | 0.002 UJ | 0.0061 UJ | 0.0068 UJ | 0.0023 UJ | 0.0029 UJ | 0.0023 UJ | 0.0022 UJ | 0.0031 UJ | 0.0023 UJ | 0.0036 UJ | 0.0031 UJ |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | 0.0048 U | 0.0062 UJ | 0.0028 U | 0.0031 U | 0.0052 U | 0.0021 U | 0.0023 U | 0.0023 U | 0.0022 UJ | 0.002 UJ | 0.0061 UJ | 0.0068 UJ | 0.0023 UJ | 0.0029 UJ | 0.0023 UJ | 0.0022 UJ | 0.0031 UJ | 0.0023 UJ | 0.0036 UJ | 0.0031 UJ |
| PEST/PCB | METHOXYCHLOR | MG/KG | 0.048 U | 0.062 UJ | 0.028 U | 0.031 U | 0.052 U | 0.021 U | 0.023 U | 0.023 U | 0.022 UJ | 0.02 UJ | 0.061 UJ | 0.068 UJ | 0.023 UJ | 0.029 UJ | 0.023 UJ | 0.022 UJ | 0.031 UJ | 0.023 UJ | 0.036 UJ | 0.031 UJ |
| PEST/PCB | TOXAPHENE | MG/KG | 0.48 U | 0.62 UJ | 0.28 U | 0.31 U | 0.52 U | 0.21 U | 0.23 U | 0.23 U | 0.22 UJ | 0.2 UJ | 0.61 UJ | 0.68 UJ | 0.23 UJ | 0.29 UJ | 0.23 UJ | 0.22 UJ | 0.31 UJ | 0.23 UJ | 0.36 UJ | 0.31 UJ |
| SVOC | 1,1'-BIPHENYL | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |
| SVOC | 1,2,4,5-TETRACHLOROBENZENE | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |
| SVOC | 2,3,4,6-TETRACHLOROPHENOL | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |
| SVOC | 2,4-DINITROPHENOL | MG/KG | 0.95 U | 1.3 UJ | 0.56 U | 0.59 U | 1 U | 0.42 U | 0.43 U | 0.46 U | 0.44 U | 0.4 U | 1.2 UJ | 1.4 UJ | 0.44 U | 0.56 U | 0.45 U | 0.45 U | 0.62 U | 0.44 U | 0.69 U | 0.61 U |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |
| SVOC | 2-CHLOROPHENOL | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | 0.061 J | 0.0088 J | 0.0057 U | 0.3 U | 0.01 U | 0.0042 U | 0.0043 U | 0.0046 U | 0.0044 U | 0.004 U | 0.0037 J | 0.0066 J | 0.0044 U | 0.0056 U | 0.0045 U | 0.0045 U | 0.007 | 0.0044 U | 0.36 U | 0.31 U |
| SVOC | 2-METHYLPHENOL | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |
| SVOC | 2-NITROANILINE | MG/KG | 0.95 U | 1.3 UJ | 0.56 U | 0.59 U | 1 U | 0.42 U | 0.43 U | 0.46 U | 0.44 U | 0.4 U | 1.2 UJ | 1.4 UJ | 0.44 U | 0.56 U | 0.45 U | 0.45 U | 0.62 U | 0.44 U | 0.69 U | 0.61 U |
| SVOC | 2-NITROPHENOL | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | 0.49 U | 0.64 UJ | 0.29 UJ | 0.3 U | 0.52 UJ | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 UJ | 0.31 UJ |
| SVOC | 3-NITROANILINE | MG/KG | 0.95 U | 1.3 UJ | 0.56 U | 0.59 U | 1 U | 0.42 U | 0.43 U | 0.46 U | 0.44 U | 0.4 U | 1.2 UJ | 1.4 UJ | 0.44 U | 0.56 U | 0.45 U | 0.45 U | 0.62 U | 0.44 U | 0.69 U | 0.61 U |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | 0.95 U | 1.3 UJ | 0.56 U | 0.59 U | 1 U | 0.42 U | 0.43 U | 0.46 U | 0.44 U | 0.4 U | 1.2 UJ | 1.4 UJ | 0.44 U | 0.56 U | 0.45 U | 0.45 U | 0.62 U | 0.44 U | 0.69 U | 0.61 U |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |
| SVOC | 4-CHLOROANILINE | MG/KG | 0.49 U | 0.64 UJ | 0.29 UJ | 0.3 U | 0.52 UJ | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 UJ | 0.31 UJ |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |
| SVOC | 4-METHYLPHENOL | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.036 J | 0.31 U |
| SVOC | 4-NITROANILINE | MG/KG | 0.95 U | 1.3 UJ | 0.56 U | 0.59 U | 1 U | 0.42 U | 0.43 U | 0.46 U | 0.44 U | 0.4 U | 1.2 UJ | 1.4 UJ | 0.44 U | 0.56 U | 0.45 U | 0.45 U | 0.62 U | 0.44 U | 0.69 U | 0.61 U |
| SVOC | 4-NITROPHENOL | MG/KG | 0.95 U | 1.3 UJ | 0.56 U | 0.59 U | 1 U | 0.42 U | 0.43 U | 0.46 U | 0.44 U | 0.4 U | 1.2 UJ | 1.4 UJ | 0.44 U | 0.56 U | 0.45 U | 0.45 U | 0.62 U | 0.44 U | 0.69 U | 0.61 U |
| SVOC | ACENAPHTHENE | MG/KG | 0.49 U | 0.011 J | 0.0057 U | 0.045 J | 0.01 U | 0.0042 U | 0.0043 U | 0.0046 U | 0.0044 U | 0.004 U | 0.0025 J | 0.0069 J | 0.00089 J | 0.0056 U | 0.0045 U | 0.0045 U | 0.012 | 0.0012 J | 0.36 U | 0.31 U |
| SVOC | ACENAPHTHYLENE | MG/KG | 0.49 U | 0.0054 J | 0.0057 U | 0.3 U | 0.01 U | 0.0042 U | 0.0043 U | 0.0046 U | 0.0044 U | 0.004 U | 0.0035 J | 0.0067 J | 0.0044 U | 0.0012 J | 0.0045 U | 0.0045 U | 0.0062 J | 0.0015 J | 0.36 U | 0.31 U |
| SVOC | ACETOPHENONE | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |
| SVOC | ANTHRACENE | MG/KG | 0.1 J | 0.025 J | 0.0032 J | 0.07 J | 0.0058 J | 0.0042 U | 0.0043 U | 0.0012 J | 0.0044 U | 0.004 U | 0.0076 J | 0.017 J | 0.0045 | 0.0069 | 0.0045 U | 0.0045 U | 0.043 | 0.0045 | 0.048 J | 0.037 J |
| SVOC | ATRAZINE | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |
| SVOC | BENZALDEHYDE | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.21 J | 0.23 J | 0.23 U | 0.049 J | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.067 J | 0.066 J |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.62 | 0.14 J | 0.023 | 0.28 J | 0.031 | 0.0042 U | 0.0015 J | 0.016 | 0.0014 J | 0.0028 J | 0.061 J | 0.14 J | 0.043 | 0.076 J | 0.0091 | 0.00098 J | 0.14 J | 0.03 | 0.37 J | 0.22 J |
| SVOC | BENZO(A)PYRENE | MG/KG | 0.64 | 0.17 J | 0.036 J | 0.32 | 0.046 | 0.0056 | 0.0067 | 0.025 J | 0.0075 | 0.009 | 0.074 J | 0.21 J | 0.059 J | 0.12 J | 0.021 | 0.0083 | 0.17 J | 0.04 | 0.52 | 0.29 J |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 0.75 | 0.23 J | 0.041 | 0.43 | 0.049 | 0.001 J | 0.0022 J | 0.035 | 0.0026 J | 0.005 | 0.11 J | 0.27 J | 0.074 J | 0.12 J | 0.021 | 0.0026 J | 0.18 J | 0.036 | 0.69 | 0.44 |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.2 J | 0.096 J | 0.03 | 0.16 J | 0.041 | 0.00095 J | 0.0016 J | 0.024 | 0.0018 J | 0.0037 J | 0.1 J | 0.091 J | 0.049 J | 0.092 J | 0.02 | 0.0046 | 0.071 J | 0.027 | 0.18 J | 0.059 J |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.68 | 0.18 J | 0.039 J | 0.3 J | 0.038 | 0.0042 U | 0.0019 J | 0.024 | 0.0019 J | 0.0039 J | 0.088 J | 0.27 J | 0.06 J | 0.15 J | 0.016 | 0.0019 J | 0.21 J | 0.028 | 0.69 | 0.45 |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | 0.49 U | 0.64 UJ | 0.029 J | 0.036 J | 0.52 U | 0.028 J | 0.022 J | 0.024 J | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.05 J | 0.23 U | 0.056 J | 0.045 J |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | SLDD0009 | SLDD0010 | SLDD0011 | SLDD0012 | SLDD0013 | SLDD0014 | SLDD0015 | SLDD0016 | SLDD0017 | SLDD0018 | SLDD0019 | SLDD0019 | SLDD0020 | SLDD0021 | SLDD0022 | SLDD0023 | SLDD0024 | SLDD0025 | SLDD0026 | SLDD0027 |
| | | Field Sample ID | SLDD0009-SD-AA-AB-0 | SLDD0010-SD-AA-AB-0 | SLDD0011-SD-AA-AB-0 | SLDD0012-SD-AA-AB-0 | SLDD0013-SD-AA-AB-0 | SLDD0014-SD-AA-AB-0 | SLDD0015-SD-AA-AB-0 | SLDD0016-SD-AA-AB-0 | SLDD0017-SD-AA-AB-0 | SLDD0018-SD-AA-AB-0 | SLDD0019-SD-AA-AB-0 | SLDD0019-SD-AA-AB-1 | SLDD0020-SD-AA-AB-0 | SLDD0021-SD-AA-AB-0 | SLDD0022-SD-AA-AB-0 | SLDD0023-SD-AA-AB-0 | SLDD0024-SD-AA-AB-0 | SLDD0025-SD-AA-AB-0 | SLDD0026-SD-AA-AB-0 | SLDD0027-SD-AA-AB-0 |
| | | Sample Date | 10/20/09 | 10/20/09 | 10/20/09 | 10/20/09 | 10/20/09 | 10/20/09 | 10/20/09 | 10/20/09 | 10/21/09 | 10/21/09 | 10/21/09 | 10/21/09 | 10/21/09 | 10/21/09 | 10/21/09 | 10/21/09 | 10/21/09 | 10/21/09 | 10/22/09 | 10/22/09 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.26 | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 2.3 | 0.31 U |
| SVOC | CAPROLACTAM | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.029 J | 0.046 J | 0.029 J | 0.091 J | 0.052 J |
| SVOC | CARBAZOLE | MG/KG | 0.06 J | 0.64 UJ | 0.29 U | 0.043 J | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.052 J | 0.032 J |
| SVOC | CHRYSENE | MG/KG | 0.78 | 0.22 J | 0.038 J | 0.42 | 0.056 J | 0.0042 U | 0.0019 J | 0.027 | 0.0018 J | 0.0037 J | 0.089 J | 0.26 J | 0.073 J | 0.11 J | 0.016 | 0.0018 J | 0.19 J | 0.035 | 0.72 | 0.38 |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.092 J | 0.054 J | 0.011 | 0.054 J | 0.011 | 0.0042 U | 0.0043 U | 0.0083 | 0.0044 UJ | 0.0012 J | 0.028 J | 0.068 J | 0.022 J | 0.034 J | 0.0049 J | 0.0045 UJ | 0.054 | 0.011 | 0.058 J | 0.31 U |
| SVOC | DIBENZOFURAN | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |
| SVOC | DIETHYLPHTHALATE | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |
| SVOC | DIMETHYLPHTHALATE | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | 0.066 J | 0.11 J | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.07 J | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.036 J |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.52 | 0.31 U |
| SVOC | FLUORANTHENE | MG/KG | 1.2 | 0.37 J | 0.075 J | 0.8 | 0.069 J | 0.0016 J | 0.0034 J | 0.05 J | 0.004 J | 0.0077 | 0.17 J | 0.45 J | 0.11 J | 0.17 J | 0.028 | 0.0035 J | 0.34 | 0.055 J | 1.5 | 0.84 |
| SVOC | FLUORENE | MG/KG | 0.051 J | 0.013 J | 0.0013 J | 0.042 J | 0.0029 J | 0.0042 U | 0.0043 U | 0.0046 U | 0.0044 U | 0.004 U | 0.005 J | 0.012 J | 0.0018 J | 0.0014 J | 0.0045 U | 0.0045 U | 0.016 | 0.002 J | 0.36 U | 0.31 U |
| SVOC | HEXACHLOROBENZENE | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.042 J | 0.31 U |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | 0.49 U | 0.64 UJ | 0.29 UJ | 0.3 U | 0.52 UJ | 0.22 U | 0.22 U | 0.24 U | 0.23 UJ | 0.21 UJ | 0.63 UJ | 0.7 UJ | 0.23 UJ | 0.29 UJ | 0.23 UJ | 0.23 UJ | 0.32 UJ | 0.23 UJ | 0.36 UJ | 0.31 UJ |
| SVOC | HEXACHLOROETHANE | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.23 J | 0.1 J | 0.032 | 0.15 J | 0.038 | 0.0042 U | 0.0018 J | 0.025 | 0.002 J | 0.004 | 0.094 J | 0.079 J | 0.043 J | 0.069 J | 0.017 | 0.0018 J | 0.062 J | 0.028 | 0.2 J | 0.058 J |
| SVOC | ISOPHORONE | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |
| SVOC | NAPHTHALENE | MG/KG | 0.052 J | 0.014 J | 0.0057 U | 0.035 J | 0.01 U | 0.0042 U | 0.0043 U | 0.0046 U | 0.0044 U | 0.004 U | 0.012 UJ | 0.013 UJ | 0.0044 U | 0.0056 U | 0.0045 U | 0.0045 U | 0.017 | 0.0044 U | 0.36 U | 0.31 U |
| SVOC | NITROBENZENE | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |
| SVOC | PENTACHLOROPHENOL | MG/KG | 0.95 U | 0.0067 J | 0.012 U | 0.59 U | 0.021 U | 0.0085 U | 0.0088 U | 0.0094 U | 0.009 U | 0.0081 U | 0.025 UJ | 0.028 UJ | 0.0089 U | 0.011 U | 0.0091 U | 0.0091 U | 0.013 U | 0.009 U | 0.69 U | 0.61 U |
| SVOC | PHENANTHRENE | MG/KG | 0.55 | 0.12 J | 0.022 | 0.36 | 0.044 | 0.0042 U | 0.0014 J | 0.015 | 0.00095 J | 0.0021 J | 0.074 J | 0.14 J | 0.029 | 0.042 | 0.0063 | 0.0013 J | 0.15 J | 0.024 | 0.4 | 0.21 J |
| SVOC | PHENOL | MG/KG | 0.49 U | 0.64 UJ | 0.29 U | 0.3 U | 0.52 U | 0.22 U | 0.22 U | 0.24 U | 0.23 U | 0.21 U | 0.63 UJ | 0.7 UJ | 0.23 U | 0.29 U | 0.23 U | 0.23 U | 0.32 U | 0.23 U | 0.36 U | 0.31 U |
| SVOC | PYRENE | MG/KG | 0.83 | 0.29 J | 0.062 J | 0.6 | 0.064 J | 0.0042 U | 0.0043 U | 0.041 J | 0.0044 U | 0.006 | 0.1 J | 0.26 J | 0.071 J | 0.12 J | 0.02 | 0.0045 U | 0.22 J | 0.045 J | 0.75 | 0.38 |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | 0.006 U | 0.012 U | 0.0067 U | 0.012 UJ | 0.01 U |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | 0.006 U | 0.012 U | 0.0067 U | 0.012 U | 0.01 U |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | 0.006 U | 0.012 U | 0.0067 U | 0.012 U | 0.01 U |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | R | 0.012 UJ | 0.0067 U | 0.012 UJ | 0.01 U |
| VOC | 1,1-DICHLOROETHANE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | R | 0.012 U | 0.0067 U | 0.012 U | 0.01 U |
| VOC | 1,1-DICHLOROETHENE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | R | 0.012 U | 0.0067 U | 0.012 UJ | 0.01 U |
| VOC | 1,2,3-TRICHLOROBENZENE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | R | R | 0.0062 U | R | 0.0066 U | R | 0.012 U | 0.0067 U | 0.012 U | R |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | R | R | 0.0062 U | R | 0.0066 U | R | 0.012 U | 0.0067 U | 0.012 U | R |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | R | R | 0.0062 U | R | 0.0066 U | R | 0.012 U | 0.0067 U | 0.012 U | R |
| VOC | 1,2-DIBROMOETHANE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | 0.006 U | 0.012 UJ | 0.0067 U | 0.012 UJ | 0.01 U |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | R | R | 0.0062 U | R | 0.0066 U | R | 0.012 U | 0.0067 U | 0.012 U | R |
| VOC | 1,2-DICHLOROETHANE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | R | 0.012 UJ | 0.0067 U | 0.012 UJ | 0.01 U |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | 0.006 U | 0.012 U | 0.0067 U | 0.012 U | 0.01 U |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | R | R | 0.0062 U | R | 0.0066 U | R | 0.012 U | 0.0067 U | 0.012 U | R |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | R | R | 0.0062 U | R | 0.0066 U | R | 0.012 U | 0.0067 U | 0.012 U | R |
| VOC | 1,4-DIOXANE (P-DIOXANE) | MG/KG | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R |
| VOC | 2-HEXANONE | MG/KG | 0.038 U | 0.051 UJ | 0.014 U | 0.055 U | 0.045 U | 0.011 U | 0.015 U | 0.011 U | 0.012 U | 0.011 U | 0.088 UJ | R | 0.012 U | 0.015 U | 0.013 U | 0.012 U | 0.025 U | 0.013 U | 0.023 U | 0.021 U |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | 0.038 U | 0.021 J | 0.014 U | 0.055 U | 0.045 U | 0.011 U | 0.015 U | 0.011 U | 0.012 U | 0.011 U | 0.088 UJ | R | 0.012 U | 0.015 U | 0.013 U | 0.012 U | 0.025 U | 0.013 U | 0.023 U | 0.021 U |
| VOC | ACETONE | MG/KG | 0.43 | 0.25 J | 0.017 | 0.55 | 1 | 0.015 | 0.011 J | 0.026 | 0.022 | 0.0045 J | 0.36 J | 0.64 J | 0.023 | 0.012 J | 0.016 | 0.029 J | 0.025 U | 0.0095 J | 0.072 | 0.11 |
| VOC | BENZENE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | 0.006 U | 0.012 U | 0.0067 U | 0.012 U | 0.01 U |
| VOC | BROMOCHLOROMETHANE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | R | 0.012 U | 0.0067 U | 0.012 U | 0.01 U |
| VOC | BROMODICHLOROMETHANE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | 0.006 U | 0.012 U | 0.0067 U | 0.012 U | 0.01 U |
| VOC | BROMOFORM | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | R | R | 0.0062 U | R | 0.0066 U | R | 0.012 U | 0.0067 U | 0.012 U | R |
| VOC | BROMOMETHANE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 UJ | 0.0066 UJ | R | 0.012 UJ | 0.0067 UJ | 0.012 U | 0.01 U |
| VOC | CARBON DISULFIDE | MG/KG | 0.0077 J | 0.14 J | 0.0069 U | 0.022 J | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.021 J | 0.018 J | 0.0062 U | 0.0073 U | 0.0066 U | R | 0.012 U | 0.0067 U | 0.012 U | 0.01 U |
| VOC | CARBON TETRACHLORIDE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | 0.006 U | 0.012 UJ | 0.0067 U | 0.012 UJ | 0.01 U |
| VOC | CHLOROBENZENE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | 0.006 U | 0.012 U | 0.0067 U | 0.012 U | 0.01 U |
| VOC | CHLOROETHANE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | R | 0.012 U | 0.0067 U | 0.012 U | 0.01 U |
| VOC | CHLOROFORM | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0046 J | 0.026 J | R | 0.0055 J | 0.0073 U | 0.0066 U | R | 0.012 U | 0.0067 U | 0.012 U | 0.01 U |
| VOC | CHLOROMETHANE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | R | 0.012 U | 0.0067 U | 0.012 U | 0.01 U |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | R | 0.012 U | 0.0067 U | 0.012 UJ | 0.01 U |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | 0.006 U | 0.012 U | 0.0067 U | 0.012 U | 0.01 U |
| VOC | CYCLOHEXANE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | 0.006 U | 0.012 U | 0.0067 U | 0.012 U | 0.01 U |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | 0.006 U | 0.012 U | 0.0067 U | 0.012 U | 0.01 U |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | R | 0.012 U | 0.0067 U | 0.012 U | 0.01 U |
| VOC | DICHLOROMETHANE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | R | 0.012 UJ | 0.0067 U | 0.012 UJ | 0.01 U |
| VOC | ETHYLBENZENE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | 0.006 U | 0.012 U | 0.0067 U | 0.012 U | 0.01 U |
| VOC | ISOPROPYLBENZENE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | 0.006 U | 0.012 U | 0.0067 U | 0.012 U | 0.01 U |
| VOC | METHYL ACETATE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | R | 0.012 UJ | 0.0067 U | 0.012 UJ | 0.01 U |
| VOC | METHYL ETHYL KETONE | MG/KG | 0.17 | 0.1 J | 0.0072 J | 0.22 | 0.38 | 0.011 U | 0.015 U | 0.011 | 0.0086 J | 0.011 U | 0.12 J | 0.25 J | 0.0083 J | 0.015 U | 0.013 U | R | 0.067 | 0.013 U | 0.029 | 0.043 |
| VOC | METHYLCYCLOHEXANE | MG/KG | 0.12 | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | 0.006 U | 0.012 U | 0.0067 U | 0.012 U | 0.01 U |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | R | 0.44 J | 0.0067 U | 0.012 UJ | 0.01 U |
| VOC | STYRENE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | 0.006 U | 0.012 U | 0.0067 U | 0.012 U | 0.01 U |
| VOC | TETRACHLOROETHENE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | 0.006 U | 0.012 U | 0.0067 U | 0.012 U | 0.01 U |
| VOC | TOLUENE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | 0.006 U | 0.012 U | 0.0067 U | 0.012 U | 0.01 U |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | R | 0.012 U | 0.0067 U | 0.012 UJ | 0.01 U |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | 0.006 U | 0.012 U | 0.0067 U | 0.012 U | 0.01 U |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | 0.006 U | 0.012 U | 0.0067 U | 0.012 U | 0.01 U |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | R | 0.012 UJ | 0.0067 U | 0.012 UJ | 0.01 U |
| VOC | VINYL CHLORIDE | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | R | 0.012 U | 0.0067 U | 0.012 U | 0.01 U |
| VOC | XYLENE, O- | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | 0.006 U | 0.012 U | 0.0067 U | 0.012 U | 0.01 U |
| VOC | XYLENES, M & P | MG/KG | 0.019 U | 0.025 UJ | 0.0069 U | 0.028 U | 0.023 U | 0.0053 U | 0.0076 U | 0.0053 U | 0.0059 U | 0.0056 U | 0.044 UJ | R | 0.0062 U | 0.0073 U | 0.0066 U | 0.006 U | 0.012 U | 0.0067 U | 0.012 U | 0.01 U |
| VOC | XYLENES (TOTAL) | MG/KG | | | | | | | | | | | | | | | | | | | | |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | SL | SL | SL | SL | SL | SL |
|---|---|---|---|---|---|---|---|---|
| | | Location ID | SLDD0028 | SLDD0029 | SLDD0030 | SLDD0031 | SLDD0032 | SLDD0033 |
| | | Field Sample ID | SLDD0028-SD-AA-AB-0 | SLDD0029-SD-AA-AB-0 | SLDD0030-SD-AA-AB-0 | SLDD0031-SD-AA-AB-0 | SLDD0032-SD-AA-AB-0 | SLDD0033-SD-AA-AB-0 |
| | | Sample Date | 10/22/09 | 10/22/09 | 10/22/09 | 10/22/09 | 10/22/09 | 10/22/09 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | |
| METALS | ALUMINUM | MG/KG | 2250 | 1480 | 2020 | 2710 | 4910 | 1780 |
| METALS | ANTIMONY | MG/KG | 6.6 U | 6 U | 10.6 U | 6.9 U | 9.4 U | 7.6 U |
| METALS | ARSENIC | MG/KG | 3.4 | 2.5 | 3.2 | 6.1 | 4.5 | 0.93 J |
| METALS | BARIUM | MG/KG | 27.5 | 23.9 | 18.9 J | 17.6 J | 48.2 | 4.9 J |
| METALS | BERYLLIUM | MG/KG | 0.55 U | 0.5 U | 0.9 U | 0.6 U | 0.8 U | 0.65 U |
| METALS | CADMIUM | MG/KG | 0.18 J | 0.32 J | 0.3 J | 0.078 J | 0.43 J | 0.63 U |
| METALS | CALCIUM | MG/KG | 8730 | 78000 | 907 | 3220 | 16900 | 106 J |
| METALS | CHROMIUM | MG/KG | 14.3 | 6.6 | 6.7 | 7.1 | 21.2 | 4 |
| METALS | COBALT | MG/KG | 2.6 J | 1.3 J | 2.3 J | 2.6 J | 3.5 J | 0.23 J |
| METALS | COPPER | MG/KG | 19.5 | 12.9 | 8.2 | 10.3 | 19.9 | 1.6 J |
| METALS | CYANIDE | MG/KG | 0.28 J | 1.7 J | 0.1 J | 0.51 J | 0.56 J | 0.13 J |
| METALS | IRON | MG/KG | 9640 | 5010 | 2690 | 9420 | 13700 | 893 |
| METALS | LEAD | MG/KG | 27.5 | 36.7 | 42.2 | 11.7 | 31.1 | 12.2 |
| METALS | MAGNESIUM | MG/KG | 5080 | 42600 | 180 J | 2470 | 9400 | 30.6 J |
| METALS | MANGANESE | MG/KG | 113 | 70.2 | 9.6 | 83.2 | 391 | 9.1 |
| METALS | MERCURY | MG/KG | 0.13 U | 0.13 | 0.11 J | 0.013 J | 0.0097 | 0.019 |
| METALS | NICKEL | MG/KG | 6 | 2.9 J | 2.6 J | 5.2 | 9 | 0.38 J |
| METALS | POTASSIUM | MG/KG | 738 | 382 J | 197 J | 1080 | 1590 | 33.9 J |
| METALS | SELENIUM | MG/KG | 3.9 U | 3.5 U | 6.2 U | 4 U | 5.5 U | 0.58 J |
| METALS | SILVER | MG/KG | 1.1 U | 1 U | 1.8 U | 1.2 U | 1.6 U | 1.3 U |
| METALS | SODIUM | MG/KG | 133 J | 136 J | 423 J | 266 J | 1050 | 29.9 J |
| METALS | THALLIUM | MG/KG | 0.25 J | 2.5 U | 4.4 U | 2.9 U | 3.9 U | 3.2 U |
| METALS | VANADIUM | MG/KG | 9.9 | 6.1 | 7.4 J | 8.9 | 21.6 | 4 J |
| METALS | ZINC | MG/KG | 53.1 | 66.6 | 24.8 | 28 | 114 | 6.5 J |
| PEST/PCB | 4,4'-DDD | MG/KG | R | 0.0042 UJ | 0.0065 UJ | 0.0042 UJ | 0.0059 UJ | 0.0046 UJ |
| PEST/PCB | 4,4'-DDE | MG/KG | 0.008 J | 0.0054 J | 0.0065 UJ | 0.0042 UJ | 0.0059 UJ | 0.0046 UJ |
| PEST/PCB | 4,4'-DDT | MG/KG | R | R | 0.0065 UJ | 0.0042 UJ | 0.0059 UJ | 0.0046 UJ |
| PEST/PCB | ALDRIN | MG/KG | 0.0022 UJ | 0.0022 UJ | 0.0034 UJ | 0.0022 UJ | 0.003 UJ | 0.0023 UJ |
| PEST/PCB | ALPHA-BHC | MG/KG | 0.0042 J | 0.0022 UJ | 0.0034 UJ | 0.0022 UJ | 0.003 UJ | 0.0023 UJ |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | R | R | 0.0034 UJ | 0.0022 UJ | 0.0027 J | 0.0023 UJ |
| PEST/PCB | AROCLOR-1016 | MG/KG | 0.043 UJ | 0.042 UJ | 0.065 UJ | 0.042 UJ | 0.059 UJ | 0.046 UJ |
| PEST/PCB | AROCLOR-1221 | MG/KG | 0.043 UJ | 0.042 UJ | 0.065 UJ | 0.042 UJ | 0.059 UJ | 0.046 UJ |
| PEST/PCB | AROCLOR-1232 | MG/KG | 0.043 UJ | 0.042 UJ | 0.065 UJ | 0.042 UJ | 0.059 UJ | 0.046 UJ |
| PEST/PCB | AROCLOR-1242 | MG/KG | 0.043 UJ | 0.042 UJ | 0.065 UJ | 0.042 UJ | 0.059 UJ | 0.046 UJ |
| PEST/PCB | AROCLOR-1248 | MG/KG | 0.043 UJ | 0.042 UJ | 0.065 UJ | 0.042 UJ | 0.059 UJ | 0.046 UJ |
| PEST/PCB | AROCLOR-1254 | MG/KG | 0.043 UJ | 0.042 UJ | 0.065 UJ | 0.042 UJ | 0.059 UJ | 0.046 UJ |
| PEST/PCB | AROCLOR-1260 | MG/KG | 0.043 UJ | 0.042 UJ | 0.065 UJ | 0.042 UJ | 0.059 UJ | 0.046 UJ |
| PEST/PCB | AROCLOR-1262 | MG/KG | 0.043 UJ | 0.042 UJ | 0.065 UJ | 0.042 UJ | 0.059 UJ | 0.046 UJ |
| PEST/PCB | AROCLOR-1268 | MG/KG | 0.043 UJ | 0.042 UJ | 0.065 UJ | 0.042 UJ | 0.059 UJ | 0.046 UJ |
| PEST/PCB | BETA-BHC | MG/KG | R | 0.0022 UJ | 0.0034 UJ | 0.0022 UJ | 0.003 UJ | 0.0023 UJ |
| PEST/PCB | DELTA-BHC | MG/KG | 0.0022 UJ | 0.0022 UJ | 0.0034 UJ | 0.0022 UJ | 0.003 UJ | 0.0023 UJ |
| PEST/PCB | DIELDRIN | MG/KG | 0.0043 UJ | 0.0042 UJ | 0.0065 UJ | 0.0042 UJ | 0.0059 UJ | 0.0046 UJ |
| PEST/PCB | ENDOSULFAN I | MG/KG | 0.0038 J | 0.0022 UJ | 0.0034 UJ | 0.0022 UJ | 0.003 UJ | 0.0023 UJ |
| PEST/PCB | ENDOSULFAN II | MG/KG | 0.0043 UJ | 0.0042 UJ | 0.0065 UJ | 0.0042 UJ | 0.0059 UJ | 0.0046 UJ |
| PEST/PCB | ENDOSULFAN SULFATE | MG/KG | R | R | 0.0065 UJ | 0.0042 UJ | 0.0059 UJ | 0.0046 UJ |
| PEST/PCB | ENDRIN | MG/KG | 0.038 J | 0.0042 UJ | 0.0065 UJ | 0.0042 UJ | 0.0059 UJ | 0.0046 UJ |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | 0.031 J | R | 0.0065 UJ | 0.0042 UJ | 0.0059 UJ | 0.0046 UJ |
| PEST/PCB | ENDRIN KETONE | MG/KG | 0.061 J | 0.0083 J | 0.0065 UJ | 0.0042 UJ | 0.0059 UJ | 0.0046 UJ |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | 0.0022 UJ | 0.0022 UJ | 0.0034 UJ | 0.0022 UJ | 0.003 UJ | 0.0023 UJ |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | R | R | R | 0.0022 UJ | R | 0.0023 UJ |
| PEST/PCB | HEPTACHLOR | MG/KG | 0.0036 J | 0.0022 UJ | 0.0034 UJ | 0.0022 UJ | 0.003 UJ | 0.0023 UJ |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | R | 0.0022 UJ | 0.0034 UJ | 0.0022 UJ | 0.003 UJ | 0.0023 UJ |
| PEST/PCB | METHOXYCHLOR | MG/KG | R | 0.022 UJ | 0.034 UJ | 0.022 UJ | 0.03 UJ | 0.023 UJ |
| PEST/PCB | TOXAPHENE | MG/KG | 0.22 UJ | 0.22 UJ | 0.34 UJ | 0.22 UJ | 0.3 UJ | 0.23 UJ |
| SVOC | 1,1'-BIPHENYL | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 UJ | 0.24 U |
| SVOC | 1,2,4,5-TETRACHLOROBENZENE | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |
| SVOC | 2,3,4,6-TETRACHLOROPHENOL | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |
| SVOC | 2,4-DICHLOROPHENOL | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |
| SVOC | 2,4-DINITROPHENOL | MG/KG | 4.3 U | 0.41 U | 0.66 U | 0.42 U | 0.58 U | 0.47 U |
| SVOC | 2,4-DINITROTOLUENE | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |
| SVOC | 2,6-DINITROTOLUENE | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |
| SVOC | 2-CHLORONAPHTHALENE | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |
| SVOC | 2-CHLOROPHENOL | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | 0.4 J | 0.0032 J | 0.34 U | 0.042 J | 0.3 U | 0.0047 U |
| SVOC | 2-METHYLPHENOL | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |
| SVOC | 2-NITROANILINE | MG/KG | 4.3 U | 0.41 U | 0.66 U | 0.42 U | 0.58 U | 0.47 U |
| SVOC | 2-NITROPHENOL | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |
| SVOC | 3-NITROANILINE | MG/KG | 4.3 U | 0.41 U | 0.66 U | 0.42 U | 0.58 U | 0.47 U |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/KG | 4.3 U | 0.41 U | 0.66 U | 0.42 U | 0.58 U | 0.47 U |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 UJ | 0.24 U |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |
| SVOC | 4-CHLOROANILINE | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 UJ | 0.24 U |
| SVOC | 4-METHYLPHENOL | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |
| SVOC | 4-NITROANILINE | MG/KG | 4.3 U | 0.41 U | 0.66 U | 0.42 U | 0.58 U | 0.47 U |
| SVOC | 4-NITROPHENOL | MG/KG | 4.3 U | 0.41 U | 0.66 U | 0.42 U | 0.58 U | 0.47 U |
| SVOC | ACENAPHTHENE | MG/KG | 5 | 0.0049 | 0.4 | 0.025 J | 0.055 J | 0.0011 J |
| SVOC | ACENAPHTHYLENE | MG/KG | 2.2 U | 0.0012 J | 0.34 U | 0.034 J | 0.3 U | 0.0047 U |
| SVOC | ACETOPHENONE | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |
| SVOC | ANTHRACENE | MG/KG | 12 | 0.011 | 1 | 0.064 J | 0.18 J | 0.0041 J |
| SVOC | ATRAZINE | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |
| SVOC | BENZALDEHYDE | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 57 | 0.062 J | 6.6 | 0.25 | 0.49 J | 0.046 |
| SVOC | BENZO(A)PYRENE | MG/KG | 63 | 0.071 J | 7.3 | 0.23 | 0.59 J | 0.076 J |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 130 J | 0.1 J | 9 | 0.16 J | 0.84 J | 0.12 J |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 9.7 | 0.022 J | 1.3 | 0.069 J | 0.16 J | 0.038 J |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 2.2 U | 0.075 J | 8.6 | 0.19 J | 0.73 J | 0.12 J |
| SVOC | BENZYL BUTYL PHTHALATE | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 UJ | 0.24 U |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |

**Table 2 Sediment Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | SL | SL | SL | SL | SL | SL |
|---|---|---|---|---|---|---|---|---|
| | | Location ID | SLDD0028 | SLDD0029 | SLDD0030 | SLDD0031 | SLDD0032 | SLDD0033 |
| | | Field Sample ID | SLDD0028-SD-AA-AB-0 | SLDD0029-SD-AA-AB-0 | SLDD0030-SD-AA-AB-0 | SLDD0031-SD-AA-AB-0 | SLDD0032-SD-AA-AB-0 | SLDD0033-SD-AA-AB-0 |
| | | Sample Date | 10/22/09 | 10/22/09 | 10/22/09 | 10/22/09 | 10/22/09 | 10/22/09 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | 2.2 U | 0.21 U | 0.25 U | 0.22 U | 0.71 J | 0.24 U |
| SVOC | CAPROLACTAM | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 UJ | 0.029 J |
| SVOC | CARBAZOLE | MG/KG | 11 | 0.21 U | 1.3 | 0.22 U | 0.075 J | 0.24 U |
| SVOC | CHRYSENE | MG/KG | 86 | 0.093 J | 10 | 0.32 | 0.77 J | 0.11 J |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 4.1 | 0.023 J | 0.48 | 0.023 J | 0.059 J | 0.026 J |
| SVOC | DIBENZOFURAN | MG/KG | 2.7 | 0.21 U | 0.21 J | 0.22 U | 0.3 UJ | 0.24 U |
| SVOC | DIETHYLPHTHALATE | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 UJ | 0.24 U |
| SVOC | DIMETHYLPHTHALATE | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 UJ | 0.24 U |
| SVOC | DI-N-BUTYLPHTHALATE | MG/KG | 2.2 U | 0.026 J | 0.11 J | 0.22 U | 0.3 UJ | 0.24 U |
| SVOC | DI-N-OCTYLPHTHALATE | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.096 J | 0.24 U |
| SVOC | FLUORANTHENE | MG/KG | 240 | 0.22 J | 28 | 0.51 | 1.9 J | 0.22 J |
| SVOC | FLUORENE | MG/KG | 6.9 | 0.0047 | 0.51 | 0.09 J | 0.03 J | 0.0023 J |
| SVOC | HEXACHLOROBENZENE | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |
| SVOC | HEXACHLOROBUTADIENE | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |
| SVOC | HEXACHLOROETHANE | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 11 | 0.024 J | 1.4 | 0.06 J | 0.17 J | 0.038 J |
| SVOC | ISOPHORONE | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |
| SVOC | NAPHTHALENE | MG/KG | 0.4 J | 0.0064 | 0.34 U | 0.032 J | 0.3 U | 0.0047 U |
| SVOC | NITROBENZENE | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |
| SVOC | N-NITROSODIPHENYLAMINE | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |
| SVOC | PENTACHLOROPHENOL | MG/KG | 4.3 U | 0.0017 J | 0.17 J | 0.42 U | 0.58 U | 0.0094 UJ |
| SVOC | PHENANTHRENE | MG/KG | 110 | 0.084 J | 10 | 0.62 | 0.55 | 0.052 J |
| SVOC | PHENOL | MG/KG | 2.2 U | 0.21 U | 0.34 U | 0.22 U | 0.3 U | 0.24 U |
| SVOC | PYRENE | MG/KG | 110 | 0.1 J | 12 | 0.44 | 0.82 J | 0.094 J |
| VOC | 1,1,1-TRICHLOROETHANE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | 1,1,2-TRICHLOROETHANE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | 1,1-DICHLOROETHANE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | 1,1-DICHLOROETHENE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | 1,2,3-TRICHLOROBENZENE | MG/KG | 0.006 U | 0.0057 U | R | 0.0063 U | R | R |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/KG | 0.006 U | 0.0057 U | R | 0.0063 U | R | R |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/KG | 0.006 U | 0.0057 U | R | 0.0063 U | R | R |
| VOC | 1,2-DIBROMOETHANE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | 1,2-DICHLOROBENZENE | MG/KG | 0.006 U | 0.0057 U | R | 0.0063 U | R | R |
| VOC | 1,2-DICHLOROETHANE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | 1,2-DICHLOROPROPANE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | 1,3-DICHLOROBENZENE | MG/KG | 0.006 U | 0.0057 U | R | 0.0063 U | R | R |
| VOC | 1,4-DICHLOROBENZENE | MG/KG | 0.006 U | 0.0057 U | R | 0.0063 U | R | R |
| VOC | 1,4-DIOXANE (P-DIOXANE) | MG/KG | R | R | R | R | R | R |
| VOC | 2-HEXANONE | MG/KG | 0.012 U | 0.011 U | 0.019 U | 0.013 U | 0.017 U | 0.019 U |
| VOC | 4-METHYL-2-PENTANONE | MG/KG | 0.012 U | 0.011 U | 0.019 U | 0.013 U | 0.015 J | 0.019 U |
| VOC | ACETONE | MG/KG | 0.018 | 0.011 U | 0.055 | 0.022 | 0.21 | 0.25 |
| VOC | BENZENE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | BROMOCHLOROMETHANE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | BROMODICHLOROMETHANE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | BROMOFORM | MG/KG | 0.006 U | 0.0057 U | R | 0.0063 U | R | R |
| VOC | BROMOMETHANE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | CARBON DISULFIDE | MG/KG | 0.006 U | 0.0057 U | 0.0057 J | 0.0063 U | 0.0049 J | 0.0053 J |
| VOC | CARBON TETRACHLORIDE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | CHLOROBENZENE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | CHLOROETHANE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | CHLOROFORM | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | CHLOROMETHANE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | CIS-1,2-DICHLOROETHENE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | CYCLOHEXANE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | DIBROMOCHLOROMETHANE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | DICHLORODIFLUOROMETHANE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | DICHLOROMETHANE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | ETHYLBENZENE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | ISOPROPYLBENZENE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | METHYL ACETATE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | METHYL ETHYL KETONE | MG/KG | 0.012 U | 0.011 U | 0.023 | 0.013 U | 0.092 | 0.1 |
| VOC | METHYLCYCLOHEXANE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/KG | 0.006 U | 0.0057 U | 0.0038 J | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | STYRENE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | TETRACHLOROETHENE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | TOLUENE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | TRICHLOROETHYLENE (TCE) | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | TRICHLOROFLUOROMETHANE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | VINYL CHLORIDE | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | XYLENE, O- | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | XYLENES, M & P | MG/KG | 0.006 U | 0.0057 U | 0.0095 U | 0.0063 U | 0.0083 U | 0.0096 U |
| VOC | XYLENES (TOTAL) | MG/KG | | | | | | |

Notes:
U: Not Detected; J: Estimated; R: Rejected.

**Table 3 Surface Water Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | BSBEDW13 | BSBEDW13 | BSBEDW14 | BSBEDW14 | BSBEDW15 | BSBEDW15 | BWDW0001 | BWDW0001 | BWDW0001 | BWDW0001 | BWDW0002 | BWDW0002 | BWDW0003 | BWDW0003 | BWDW0004 | BWDW0004 | BWDW0005 | BWDW0005 | BWDW0006 | BWDW0006 | BWDW0007 |
| | | Field Sample ID | BSBEDW13-SW-AA-R3-0 | BSBEDW13-SW-AA-R4-0 | BSBEDW14-SW-AA-R3-0 | BSBEDW14-SW-AA-R4-0 | BSBEDW15-SW-AA-R3-0 | BSBEDW15-SW-AA-R4-0 | BWDW0001-SW-AG-R1-0 | BWDW0001-SW-AG-R2-0 | BWDW0001-SW-AG-R1-1 | BWDW0001-SW-AG-R2-1 | BWDW0002-SW-AG-R1-0 | BWDW0002-SW-AG-R2-0 | BWDW0003-SW-AG-R1-0 | BWDW0003-SW-AG-R2-0 | BWDW0004-SW-AG-R1-0 | BWDW0004-SW-AG-R2-0 | BWDW0005-SW-AG-R1-0 | BWDW0005-SW-AG-R2-0 | BWDW0006-SW-AG-R1-0 | BWDW0006-SW-AG-R2-0 | BWDW0007-SW-AG-R1-0 |
| | | Sample Date | 10/29/2015 | 11/9/2015 | 10/29/2015 | 11/9/2015 | 10/29/2015 | 11/9/2015 | 9/12/2005 | 10/17/2005 | 9/12/2005 | 10/17/2005 | 9/12/2005 | 10/17/2005 | 9/12/2005 | 10/17/2005 | 9/12/2005 | 10/17/2005 | 9/12/2005 | 10/17/2005 | 9/12/2005 | 10/17/2005 | 9/12/2005 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/L | 0.0725 | 0.0585 | 0.185 | 0.098 | 0.375 | 0.11 | 0.0353 J | 0.203 | 0.0636 J | 0.199 J | 0.0852 J | 0.225 | 0.294 | 0.198 J | 0.0598 J | 0.191 J | 0.824 | 0.193 J | 0.0567 J | 0.191 J | 0.526 |
| METALS | ANTIMONY | MG/L | 0.00033 J | 0.00028 J | 0.0003 J | 0.00023 J | 0.00028 J | 0.00016 J | 0.0027 U | 0.0047 U | 0.0027 U | 0.0047 U | 0.0027 U | 0.0047 U | 0.0042 J | 0.0047 U | 0.0027 U | 0.0047 U | 0.0027 J | 0.0047 U | 0.0027 U | 0.0047 U | 0.0027 U |
| METALS | ARSENIC | MG/L | 0.0074 | 0.0092 | 0.0084 | 0.0128 | 0.0172 | 0.0175 | 0.0083 J | 0.0048 U | 0.0064 J | 0.0056 J | 0.0085 J | 0.0048 J | 0.0165 | 0.0048 U | 0.0055 J | 0.0065 J | 0.0144 | 0.0048 J | 0.0066 J | 0.0048 J | 0.0142 |
| METALS | BARIUM | MG/L | 0.168 | 0.178 | 0.142 | 0.178 | 0.127 | 0.187 | 0.131 J | 0.104 J | 0.128 J | 0.105 J | 0.131 J | 0.105 J | 0.111 J | 0.0937 J | 0.126 J | 0.103 J | 0.147 J | 0.118 J | 0.14 J | 0.118 J | 0.162 J |
| METALS | BERYLLIUM | MG/L | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.0001 U | 0.00064 U | 0.0001 U | 0.00064 U | 0.00012 J | 0.00064 U | 0.00011 J | 0.00064 U | 0.0001 U | 0.00064 U | 0.00014 J | 0.00064 U | 0.0001 U | 0.00064 U | 0.0001 U |
| METALS | CADMIUM | MG/L | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.00037 J | 0.00033 J | 0.0003 J | 0.00083 U | 0.0002 U | 0.00083 U | 0.00034 J | 0.00083 U | 0.0002 U | 0.00083 U | 0.0002 U | 0.00083 U | 0.00099 J | 0.00083 U | 0.0002 U | 0.00083 U | 0.0002 U |
| METALS | CALCIUM | MG/L | | | | | | | 8.86 | 8.01 | 8.6 | 7.85 | 9.11 | 7.86 | 9.26 | 9.27 | 8.46 | 7.61 | 8.67 | 8.54 | 9.28 | 8.53 | 9.29 |
| METALS | CHROMIUM | MG/L | 0.0013 J | 0.0015 J | 0.0017 J | 0.0015 J | 0.0036 | 0.0014 J | 0.00092 J | 0.0028 J | 0.0008 U | 0.002 U | 0.0018 J | 0.002 U | 0.0074 J | 0.002 U | 0.0008 U | 0.002 U | 0.0052 J | 0.002 U | 0.0008 U | 0.002 U | 0.00097 J |
| METALS | COBALT | MG/L | 0.00024 J | 0.00048 J | 0.00042 J | 0.00055 | 0.00083 | 0.0004 J | 0.0013 J | 0.0014 U | 0.0009 U | 0.0014 U | 0.0015 J | 0.0014 U | 0.0009 U | 0.0014 U | 0.0009 U | 0.0014 U | 0.002 J | 0.0017 J | 0.0009 U | 0.0014 U | 0.0009 U |
| METALS | COPPER | MG/L | 0.003 | 0.0015 J | 0.0029 | 0.0019 J | 0.0042 | 0.00098 J | 0.0034 U | 0.005 U | 0.0034 U | 0.005 U | 0.0034 U | 0.005 U | 0.0034 U | 0.005 U | 0.0034 U | 0.005 U | 0.0086 J | 0.005 U | 0.0034 U | 0.005 U | 0.0034 U |
| METALS | CYANIDE | MG/L | 0.00084 J | 0.01 U | 0.0019 J | 0.01 U | 0.0022 J | 0.01 U | 0.0011 U | 0.00086 U | 0.0011 U | 0.00086 U | 0.0011 U | 0.00086 U | 0.0011 U | 0.00086 U | 0.0011 U | 0.00086 U | 0.0011 U | 0.00086 U | 0.0011 U | 0.0068 J | 0.0011 U |
| METALS | IRON | MG/L | 1.78 | 2.09 | 1.64 | 3.02 | 3.27 | 2.16 | 0.826 | 1.25 | 0.766 | 1.22 | 0.954 | 1.25 | 4.99 | 1.33 | 0.822 | 1.21 | 3.95 | 1.37 | 1.45 | 1.36 | 3.42 |
| METALS | LEAD | MG/L | 0.0085 | 0.0075 | 0.0101 | 0.0103 | 0.0255 | 0.0093 | 0.0018 U | 0.0048 | 0.0049 | 0.0052 | 0.0074 | 0.0047 | 0.0849 | 0.0159 | 0.0036 | 0.0047 J | 0.0431 | 0.0039 J | 0.0018 U | 0.0047 J | 0.0243 |
| METALS | MAGNESIUM | MG/L | | | | | | | 1.95 J | 1.63 J | 1.86 J | 1.63 J | 1.93 J | 1.6 J | 1.65 J | 1.72 J | 1.78 J | 1.57 J | 1.84 J | 1.72 J | 1.89 J | 1.72 J | 1.88 J |
| METALS | MANGANESE | MG/L | 0.0727 | 0.155 | 0.0889 | 0.179 | 0.0798 | 0.0818 | 0.0124 J | 0.0174 | 0.012 J | 0.0157 | 0.0128 J | 0.0167 | 0.0779 | 0.0303 | 0.0132 J | 0.0163 | 0.0418 | 0.0161 | 0.0212 | 0.0163 | 0.0422 |
| METALS | MERCURY | MG/L | 0.0002 U | 0.0002 U | 0.0002 U | 0.0002 U | 0.0002 U | 0.0002 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.00017 J | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U |
| METALS | NICKEL | MG/L | 0.0011 | 0.0011 | 0.0012 | 0.0011 | 0.0017 | 0.001 J | 0.0023 J | 0.0025 J | 0.0013 J | 0.0022 J | 0.0026 J | 0.0026 J | 0.0059 J | 0.0018 J | 0.0012 J | 0.0019 J | 0.004 J | 0.0018 J | 0.0013 J | 0.0019 J | 0.0013 J |
| METALS | POTASSIUM | MG/L | | | | | | | 1.7 J | 1.45 J | 1.62 J | 1.47 J | 1.64 J | 1.37 J | 1.53 J | 1.4 J | 1.52 J | 1.35 J | 1.81 J | 1.46 J | 1.51 J | 1.46 J | 1.39 J |
| METALS | SELENIUM | MG/L | 0.005 U | 0.005 U | 0.005 U | 0.005 U | 0.005 U | 0.005 U | 0.0042 U | 0.0042 U | 0.0042 UJ | 0.0042 U | 0.0042 U | 0.0042 U | 0.0042 UJ | 0.0042 U | 0.0042 UJ | 0.0042 U | 0.0042 UJ | 0.0042 U | 0.0042 U | 0.0042 U | 0.0042 U |
| METALS | SILVER | MG/L | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.0018 J | 0.0012 U | 0.0007 U | 0.0012 U | 0.0017 J | 0.0012 U | 0.0007 U | 0.0012 U | 0.0007 U | 0.0012 U | 0.0017 J | 0.0012 J | 0.0007 U | 0.0012 U | 0.0007 U |
| METALS | SODIUM | MG/L | | | | | | | 18.2 | 11.9 | 17.5 | 11.8 | 17.9 | 11.9 | 16.5 | 12.1 | 17.2 | 11.7 | 17.4 | 13 | 18.2 | 13.7 | 17.8 |
| METALS | THALLIUM | MG/L | 0.000047 J | 0.001 U | 0.000034 J | 0.001 U | 0.000047 J | 0.001 U | 0.0044 U | 0.0046 U | 0.0044 U | 0.0046 U | 0.0044 U | 0.0046 U | 0.0044 U | 0.0049 J | 0.0044 U | 0.0056 J | 0.0044 U | 0.0046 U | 0.0044 U | 0.0046 U | 0.0044 U |
| METALS | VANADIUM | MG/L | 0.001 U | 0.00066 J | 0.00027 J | 0.00057 J | 0.00072 J | 0.001 U | 0.0041 J | 0.0012 U | 0.0005 U | 0.0012 J | 0.0009 J | 0.0012 U | 0.00089 J | 0.0012 U | 0.0005 U | 0.0012 U | 0.0032 J | 0.0012 U | 0.0005 U | 0.0012 U | 0.0014 J |
| METALS | ZINC | MG/L | 0.0244 | 0.0234 | 0.0646 | 0.025 | 0.0868 | 0.0783 | 0.0069 J | 0.0477 J | 0.0119 J | 0.0368 | 0.0147 J | 0.0498 J | 0.0699 | 0.0706 J | 0.0121 J | 0.0379 J | 0.118 | 0.0522 J | 0.0155 J | 0.0392 J | 0.0713 |
| PEST/PCB | 4,4'-DDD | MG/L | 0.0000095 UJ | 0.0000095 U | 0.0000097 UJ | 0.00000021 J | 0.0000014 J | 0.0000095 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U |
| PEST/PCB | 4,4'-DDE | MG/L | 0.0000095 U | 0.0000095 U | 0.00000016 J | 0.0000094 U | 0.00000065 J | 0.0000095 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U |
| PEST/PCB | 4,4'-DDT | MG/L | 0.0000095 U | 0.0000095 U | 0.0000097 U | 0.0000094 U | 0.0000096 U | 0.0000095 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U |
| PEST/PCB | ALDRIN | MG/L | | | | | | | 0.000056 U | 0.00005 U | 0.000056 U | 0.00005 U | 0.000057 U | 0.00005 U | 0.000052 U | 0.000053 U | 0.000054 U | 0.000053 U | 0.000056 U | 0.00005 U | 0.000057 U | 0.000051 U | 0.000057 U |
| PEST/PCB | ALPHA-BHC | MG/L | | | | | | | 0.000056 U | 0.00005 U | 0.000056 U | 0.00005 U | 0.000057 U | 0.00005 U | 0.000052 U | 0.000053 U | 0.000054 U | 0.000053 U | 0.000056 U | 0.00005 U | 0.000057 U | 0.000051 U | 0.000057 U |
| PEST/PCB | ALPHA-CHLORDANE | MG/L | 0.0000047 UJ | 0.0000048 U | 0.0000048 UJ | 0.0000047 U | 0.0000048 UJ | 0.0000048 U | 0.000056 U | 0.00005 U | 0.000056 U | 0.00005 U | 0.000057 U | 0.00005 U | 0.000052 U | 0.000053 U | 0.000054 U | 0.000053 U | 0.000056 U | 0.00005 U | 0.000057 U | 0.000051 U | 0.000057 U |
| PEST/PCB | AROCLOR-1016 | MG/L | | | | | | | 0.0011 U | 0.001 U | 0.0011 U | 0.001 U | 0.0011 U | 0.001 U | 0.001 U | 0.001 U | 0.0011 U | 0.001 U | 0.0011 U | 0.001 U | 0.0011 U | 0.001 U | 0.0011 U |
| PEST/PCB | AROCLOR-1221 | MG/L | | | | | | | 0.0022 U | 0.002 U | 0.0022 U | 0.002 U | 0.0023 U | 0.002 U | 0.0021 U | 0.0021 U | 0.0022 U | 0.0021 U | 0.0022 U | 0.002 U | 0.0023 U | 0.002 U | 0.0023 U |
| PEST/PCB | AROCLOR-1232 | MG/L | | | | | | | 0.0011 U | 0.001 U | 0.0011 U | 0.001 U | 0.0011 U | 0.001 U | 0.001 U | 0.001 U | 0.0011 U | 0.001 U | 0.0011 U | 0.001 U | 0.0011 U | 0.001 U | 0.0011 U |
| PEST/PCB | AROCLOR-1242 | MG/L | | | | | | | 0.0011 U | 0.001 U | 0.0011 U | 0.001 U | 0.0011 U | 0.001 U | 0.001 U | 0.001 U | 0.0011 U | 0.001 U | 0.0011 U | 0.001 U | 0.0011 U | 0.001 U | 0.0011 U |
| PEST/PCB | AROCLOR-1248 | MG/L | | | | | | | 0.0011 U | 0.001 U | 0.0011 U | 0.001 U | 0.0011 U | 0.001 U | 0.001 U | 0.001 U | 0.0011 U | 0.001 U | 0.0011 U | 0.001 U | 0.0011 U | 0.001 U | 0.0011 U |
| PEST/PCB | AROCLOR-1254 | MG/L | 0.000096 U | 0.000095 U | 0.000099 U | 0.000094 U | 0.0001 U | 0.000095 U | 0.0011 U | 0.001 U | 0.0011 U | 0.001 U | 0.0011 U | 0.001 U | 0.001 U | 0.001 U | 0.0011 U | 0.001 U | 0.0011 U | 0.001 U | 0.0011 U | 0.001 U | 0.0011 U |
| PEST/PCB | AROCLOR-1260 | MG/L | 0.000096 U | 0.000095 U | 0.000099 U | 0.000094 U | 0.0001 U | 0.000095 U | 0.0011 U | 0.001 U | 0.0011 U | 0.001 U | 0.0011 U | 0.001 U | 0.001 U | 0.001 U | 0.0011 U | 0.001 U | 0.0011 U | 0.001 U | 0.0011 U | 0.001 U | 0.0011 U |
| PEST/PCB | AROCLOR-1262 | MG/L | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1268 | MG/L | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | BETA-BHC | MG/L | 0.0000047 U | 0.0000048 U | 0.00000096 J | 0.0000047 U | 0.0000017 J | 0.0000048 U | 0.000056 U | 0.00005 U | 0.000056 U | 0.00005 U | 0.000057 U | 0.00005 U | 0.000052 U | 0.000053 U | 0.000054 U | 0.000053 U | 0.000056 U | 0.00005 U | 0.000057 U | 0.000051 U | 0.000057 U |
| PEST/PCB | DELTA-BHC | MG/L | 0.0000047 U | 0.00000026 J | 0.0000048 U | 0.0000047 U | 0.0000048 U | 0.0000048 U | 0.000056 U | 0.00005 U | 0.000056 U | 0.00005 U | 0.000057 U | 0.00005 U | 0.000052 U | 0.000053 U | 0.000054 U | 0.000053 U | 0.000056 U | 0.00005 U | 0.000057 U | 0.000051 U | 0.000057 U |
| PEST/PCB | DIELDRIN | MG/L | | | | | | | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U |
| PEST/PCB | ENDOSULFAN I | MG/L | | | | | | | 0.000056 U | 0.00005 U | 0.000056 U | 0.00005 U | 0.000057 U | 0.00005 U | 0.000052 U | 0.000053 U | 0.000054 U | 0.000053 U | 0.000056 U | 0.00005 U | 0.000057 U | 0.000051 U | 0.000057 U |
| PEST/PCB | ENDOSULFAN II | MG/L | | | | | | | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U |
| PEST/PCB | ENDOSULFAN SULFATE | MG/L | | | | | | | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U |
| PEST/PCB | ENDRIN | MG/L | 0.0000095 U | 0.0000095 U | 0.0000097 U | 0.0000094 U | 0.0000096 U | 0.00000021 J | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U |
| PEST/PCB | ENDRIN ALDEHYDE | MG/L | 0.0000095 U | 0.0000095 U | 0.0000097 U | 0.00000022 J | 0.0000006 J | 0.0000095 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U |
| PEST/PCB | ENDRIN KETONE | MG/L | 0.0000095 U | 0.0000095 U | 0.0000097 U | 0.0000094 U | 0.0000096 U | 0.0000095 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.00011 U |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/L | 0.0000013 J | 0.0000018 J | 0.0000024 J | 0.0000026 J | 0.0000039 J | 0.0000017 J | 0.000056 U | 0.00005 U | 0.000056 U | 0.00005 U | 0.000057 U | 0.00005 U | 0.000052 U | 0.000053 U | 0.000054 U | 0.000053 U | 0.000056 U | 0.00005 U | 0.000057 U | 0.000051 U | 0.000057 U |
| PEST/PCB | GAMMA-CHLORDANE | MG/L | 0.0000047 U | 0.0000048 U | 0.0000048 U | 0.0000047 U | 0.0000048 U | 0.0000048 U | 0.000056 U | 0.00005 U | 0.000056 U | 0.00005 U | 0.000057 U | 0.00005 U | 0.000052 U | 0.000053 U | 0.000054 U | 0.000053 U | 0.000056 U | 0.00005 U | 0.000057 U | 0.000051 U | 0.000057 U |
| PEST/PCB | HEPTACHLOR | MG/L | | | | | | | 0.000056 U | 0.00005 U | 0.000056 U | 0.00005 U | 0.000057 U | 0.00005 U | 0.000052 U | 0.000053 U | 0.000054 U | 0.000053 U | 0.000056 U | 0.00005 U | 0.000057 U | 0.000051 U | 0.000057 U |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/L | 0.00000015 J | 0.0000048 U | 0.0000048 U | 0.0000047 U | 0.0000048 U | 0.0000048 U | 0.000056 U | 0.00005 U | 0.000056 U | 0.00005 U | 0.000057 U | 0.00005 U | 0.000052 U | 0.000053 U | 0.000054 U | 0.000053 U | 0.000056 U | 0.00005 U | 0.000057 U | 0.000051 U | 0.000057 U |
| PEST/PCB | METHOXYCHLOR | MG/L | 0.000047 U | 0.000048 U | 0.000048 U | 0.000047 U | 0.000048 U | 0.000048 U | 0.00056 U | 0.0005 U | 0.00056 U | 0.0005 U | 0.00057 U | 0.0005 U | 0.00052 U | 0.00053 U | 0.00054 U | 0.00053 U | 0.00056 U | 0.0005 U | 0.00057 U | 0.00051 U | 0.00057 U |
| PEST/PCB | TOXAPHENE | MG/L | | | | | | | 0.0056 U | 0.005 U | 0.0056 U | 0.005 U | 0.0057 U | 0.005 U | 0.0052 U | 0.0053 U | 0.0054 U | 0.0053 U | 0.0056 U | 0.005 U | 0.0057 U | 0.0051 U | 0.0057 U |
| SVOC | 1,1'-BIPHENYL | MG/L | 0.0048 U | 0.0047 U | 0.0051 U | 0.0047 U | 0.0049 U | 0.0047 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 1,2,4,5-TETRACHLOROBENZENE | MG/L | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 2,3,4,6-TETRACHLOROPHENOL | MG/L | 0.0048 U | 0.0047 U | 0.0051 U | 0.0047 U | 0.0049 U | 0.0047 U | | | | | | | | | | | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/L | | | | | | | 0.026 U | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.026 U | 0.025 U | 0.025 U | 0.026 U | 0.026 U | 0.026 U | 0.025 U | 0.026 U |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 2,4-DICHLOROPHENOL | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 2,4-DIMETHYLPHENOL | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 2,4-DINITROPHENOL | MG/L | | | | | | | 0.026 U | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.026 U | 0.025 U | 0.025 U | 0.026 U | 0.026 U | 0.026 U | 0.025 U | 0.026 U |
| SVOC | 2,4-DINITROTOLUENE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 2,6-DINITROTOLUENE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 2-CHLORONAPHTHALENE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 2-CHLOROPHENOL | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 2-METHYLNAPHTHALENE | MG/L | 0.000095 U | 0.0000035 J | 0.0001 U | 0.000095 U | 0.000099 U | 0.000095 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 2-METHYLPHENOL | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 2-NITROANILINE | MG/L | | | | | | | 0.026 U | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.026 U | 0.025 U | 0.025 U | 0.026 U | 0.026 U | 0.026 U | 0.025 U | 0.026 U |
| SVOC | 2-NITROPHENOL | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 3-NITROANILINE | MG/L | | | | | | | 0.026 U | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.026 U | 0.025 U | 0.025 U | 0.026 U | 0.026 U | 0.026 U | 0.025 U | 0.026 U |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/L | | | | | | | 0.026 U | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.026 U | 0.025 U | 0.025 U | 0.026 U | 0.026 U | 0.026 U | 0.025 U | 0.026 U |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 4-CHLOROANILINE | MG/L | 0.0048 U | 0.0047 U | 0.0051 U | 0.0047 U | 0.0049 U | 0.0047 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 4-METHYLPHENOL | MG/L | 0.0048 U | 0.0047 U | 0.0051 U | 0.0047 U | 0.0049 U | 0.0047 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 4-NITROANILINE | MG/L | | | | | | | 0.026 U | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.026 U | 0.025 U | 0.025 U | 0.026 U | 0.026 U | 0.026 U | 0.025 U | 0.026 U |
| SVOC | 4-NITROPHENOL | MG/L | | | | | | | 0.026 U | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.026 U | 0.025 U | 0.025 U | 0.026 U | 0.026 U | 0.026 U | 0.025 U | 0.026 U |
| SVOC | ACENAPHTHENE | MG/L | 0.000013 J | 0.0000083 J | 0.0000032 J | 0.000095 U | 0.0000036 J | 0.0000028 J | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | ACENAPHTHYLENE | MG/L | 0.000095 U | 0.000095 U | 0.0001 U | 0.000095 U | 0.000099 U | 0.000095 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | ACETOPHENONE | MG/L | 0.0048 U | 0.0047 U | 0.0051 U | 0.0047 U | 0.0049 U | 0.0047 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | ANTHRACENE | MG/L | 0.0000048 J | 0.000095 U | 0.0000016 J | 0.000095 U | 0.000099 U | 0.000095 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | ATRAZINE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | BENZALDEHYDE | MG/L | 0.0048 U | 0.0047 U | 0.0051 U | 0.0047 U | 0.0049 U | 0.0047 U | 0.01 U | 0.01 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | BENZO(A)ANTHRACENE | MG/L | 0.000029 J | 0.0000018 J | 0.0000056 J | 0.0000076 J | 0.000012 J | 0.0000026 J | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | BENZO(A)PYRENE | MG/L | 0.000034 J | 0.000095 U | 0.0001 U | 0.000095 U | 0.000099 U | 0.000095 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | BENZO(B)FLUORANTHENE | MG/L | 0.000048 J | 0.000095 U | 0.0001 U | 0.000095 U | 0.000099 U | 0.000095 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | BENZO(G,H,I)PERYLENE | MG/L | 0.000017 J | 0.000095 U | 0.0000032 J | 0.0000061 J | 0.0000085 J | 0.000095 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |

**Table 3 Surface Water Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | BSBEDW13 | BSBEDW13 | BSBEDW14 | BSBEDW14 | BSBEDW15 | BSBEDW15 | BWDW0001 | BWDW0001 | BWDW0001 | BWDW0001 | BWDW0002 | BWDW0002 | BWDW0003 | BWDW0003 | BWDW0004 | BWDW0004 | BWDW0005 | BWDW0005 | BWDW0006 | BWDW0006 | BWDW0007 |
| | | Field Sample ID | BSBEDW13-SW-AA-R3-0 | BSBEDW13-SW-AA-R4-0 | BSBEDW14-SW-AA-R3-0 | BSBEDW14-SW-AA-R4-0 | BSBEDW15-SW-AA-R3-0 | BSBEDW15-SW-AA-R4-0 | BWDW0001-SW-AG-R1-0 | BWDW0001-SW-AG-R2-0 | BWDW0001-SW-AG-R1-1 | BWDW0001-SW-AG-R2-1 | BWDW0002-SW-AG-R1-0 | BWDW0002-SW-AG-R2-0 | BWDW0003-SW-AG-R1-0 | BWDW0003-SW-AG-R2-0 | BWDW0004-SW-AG-R1-0 | BWDW0004-SW-AG-R2-0 | BWDW0005-SW-AG-R1-0 | BWDW0005-SW-AG-R2-0 | BWDW0006-SW-AG-R1-0 | BWDW0006-SW-AG-R2-0 | BWDW0007-SW-AG-R1-0 |
| | | Sample Date | 10/29/2015 | 11/9/2015 | 10/29/2015 | 11/9/2015 | 10/29/2015 | 11/9/2015 | 9/12/2005 | 10/17/2005 | 9/12/2005 | 10/17/2005 | 9/12/2005 | 10/17/2005 | 9/12/2005 | 10/17/2005 | 9/12/2005 | 10/17/2005 | 9/12/2005 | 10/17/2005 | 9/12/2005 | 10/17/2005 | 9/12/2005 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(K)FLUORANTHENE | MG/L | 0.000039 J | 0.000095 U | 0.0001 U | 0.000095 U | 0.000099 U | 0.000095 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | BENZYL BUTYL PHTHALATE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/L | 0.0048 U | 0.0047 U | 0.0051 U | 0.0047 U | 0.0049 U | 0.0047 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | CAPROLACTAM | MG/L | 0.0048 U | 0.0047 U | 0.0051 U | 0.0047 U | 0.0049 U | 0.0047 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0007 J | 0.01 U | 0.01 U |
| SVOC | CARBAZOLE | MG/L | 0.0048 U | 0.0047 U | 0.0051 U | 0.0047 U | 0.0049 U | 0.0047 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | CHRYSENE | MG/L | 0.000048 J | 0.0000033 J | 0.0000068 J | 0.000011 J | 0.000016 J | 0.0000033 J | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/L | 0.0000055 J | 0.000095 U | 0.0001 U | 0.000095 U | 0.000099 U | 0.000095 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | DIBENZOFURAN | MG/L | 0.0048 U | 0.0047 U | 0.0051 U | 0.0047 U | 0.0049 U | 0.0047 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | DIETHYLPHTHALATE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | DIMETHYLPHTHALATE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | DI-N-BUTYLPHTHALATE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | DI-N-OCTYLPHTHALATE | MG/L | | | | | | | 0.01 U | 0.01 UJ | 0.01 U | 0.01 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U |
| SVOC | FLUORANTHENE | MG/L | 0.000095 U | 0.0000069 J | 0.0001 U | 0.000015 J | 0.000099 U | 0.0000065 J | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | FLUORENE | MG/L | 0.0000063 J | 0.0000045 J | 0.000015 J | 0.0000053 J | 0.000099 U | 0.0000056 J | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | HEXACHLOROBENZENE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | HEXACHLOROBUTADIENE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | HEXACHLOROETHANE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/L | 0.000018 J | 0.000095 U | 0.0000025 J | 0.000006 J | 0.0000084 J | 0.000095 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | ISOPHORONE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | NAPHTHALENE | MG/L | 0.000095 U | 0.000095 U | 0.0001 U | 0.000095 U | 0.000099 U | 0.000095 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | NITROBENZENE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | N-NITROSODIPHENYLAMINE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | PENTACHLOROPHENOL | MG/L | 0.00019 U | 0.0000052 J | 0.0000068 J | 0.0000061 J | 0.00003 J | 0.000011 J | 0.026 U | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.026 U | 0.025 U | 0.025 U | 0.026 U | 0.026 U | 0.026 U | 0.025 U | 0.026 U |
| SVOC | PHENANTHRENE | MG/L | 0.000095 U | 0.0000089 J | 0.0001 U | 0.0000094 J | 0.000099 U | 0.0000084 J | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | PHENOL | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | PYRENE | MG/L | 0.000056 J | 0.0000058 J | 0.000012 J | 0.000015 J | 0.000025 J | 0.000095 UJ | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 1,1,1-TRICHLOROETHANE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 1,1,2-TRICHLOROETHANE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 1,1-DICHLOROETHANE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 1,1-DICHLOROETHENE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 1,2,3-TRICHLOROBENZENE | MG/L | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 UJ |
| VOC | 1,2-DIBROMOETHANE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 1,2-DICHLOROBENZENE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 1,2-DICHLOROETHANE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 1,2-DICHLOROPROPANE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 1,3-DICHLOROBENZENE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 1,4-DICHLOROBENZENE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 2-HEXANONE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 4-METHYL-2-PENTANONE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | ACETONE | MG/L | 0.005 U | 0.005 U | 0.005 U | 0.005 U | 0.0077 J | 0.005 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U |
| VOC | BENZENE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | BROMOCHLOROMETHANE | MG/L | | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | BROMOFORM | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | BROMOMETHANE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 UJ |
| VOC | CARBON DISULFIDE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | CARBON TETRACHLORIDE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | CHLOROBENZENE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | CHLOROETHANE | MG/L | | | | | | | 0.01 U | 0.01 UJ | 0.01 U | 0.01 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | CHLOROFORM | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | CHLOROMETHANE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U |
| VOC | CIS-1,2-DICHLOROETHENE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | CYCLOHEXANE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | DIBROMOCHLOROMETHANE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | DICHLORODIFLUOROMETHANE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 UJ |
| VOC | DICHLOROMETHANE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | ETHYLBENZENE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | ISOPROPYLBENZENE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.000012 J | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | METHYL ACETATE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | METHYL ETHYL KETONE | MG/L | 0.005 U | 0.005 U | 0.005 U | 0.005 U | 0.0012 J | 0.005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | METHYLCYCLOHEXANE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | STYRENE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | TETRACHLOROETHENE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | TOLUENE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 UJ |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | TRICHLOROETHYLENE (TCE) | MG/L | 0.000027 J | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | TRICHLOROFLUOROMETHANE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | VINYL CHLORIDE | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U |
| VOC | XYLENE, O- | MG/L | | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/L | | | | | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | XYLENES, M & P | MG/L | | | | | | | | | | | | | | | | | | | | | |

**Table 3 Surface Water Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | BWDW0007 | BWDW0008 | BWDW0008 | BWDW0009 | BWDW0009 | BWDW0010 | BWDW0010 | BWDW0010 | BWDW0010 | HCDW0006 | HCDW0006 | HCDW0007 | HCDW0007 | HCDW0008 | HCDW0008 | HCDW0009 | HCDW0009 | HCDW0010 | HCDW0010 | HCDW0011 | HCDW0011 |
| | | Field Sample ID | BWDW0007-SW-AG-R2-0 | BWDW0008-SW-AB-R2-0 | BWDW0008-SW-AB-R1-0 | BWDW0009-SW-AB-R1-0 | BWDW0009-SW-AB-R2-0 | BWDW0010-SW-AB-R1-0 | BWDW0010-SW-AB-R2-0 | BWDW0010-SW-AB-R5-0 | BWDW0010-SW-AB-R5-1 | HCDW0006-SW-AA-R1-0 | HCDW0006-SW-AA-R2-0 | HCDW0007-SW-AA-R1-0 | HCDW0007-SW-AA-R2-0 | HCDW0008-SW-AA-R1-0 | HCDW0008-SW-AA-R2-0 | HCDW0009-SW-AA-R1-0 | HCDW0009-SW-AA-R2-0 | HCDW0010-SW-AA-R1-0 | HCDW0010-SW-AA-R2-0 | HCDW0011-SW-AA-R1-0 | HCDW0011-SW-AA-R2-0 |
| | | Sample Date | 10/17/2005 | 10/17/2005 | 9/12/2005 | 9/12/2005 | 10/18/2005 | 9/12/2005 | 10/18/2005 | 7/5/2011 | 7/5/2011 | 9/14/2005 | 10/20/2005 | 9/13/2005 | 10/20/2005 | 9/13/2005 | 10/20/2005 | 9/13/2005 | 10/19/2005 | 9/13/2005 | 10/19/2005 | 9/12/2005 | 10/19/2005 |
| | | Depth (ft) | 3 | 0.5 | 0.5-1 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5-1 | 0.5-1 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/L | 0.185 J | 0.195 J | 1.59 | 5.25 | 0.173 J | 0.112 J | 0.189 J | 0.109 J | 0.0767 J | 0.113 J | 0.0557 U | 0.126 J | 0.131 J | 0.0752 J | 0.195 J | 0.0921 J | 0.123 J | 0.334 J | 1.51 | 0.577 | 0.0988 J |
| METALS | ANTIMONY | MG/L | 0.0047 U | 0.0047 U | 0.0027 U | 0.0027 U | 0.0047 U | 0.0027 U | 0.0047 U | 0.06 U | 0.06 U | 0.0038 J | 0.0047 U | 0.0038 J | 0.0047 U | 0.0027 U | 0.0047 U | 0.0027 U | 0.0047 U | 0.004 J | 0.0047 U | 0.0027 U | 0.0047 U |
| METALS | ARSENIC | MG/L | 0.0059 J | 0.0064 J | 0.0389 | 0.108 J | 0.0074 J | 0.0086 J | 0.0087 J | 0.0115 | 0.0095 J | 0.0045 UJ | 0.0073 J | 0.0095 J | 0.0048 U | 0.0087 J | 0.0048 U | 0.0086 J | 0.0063 J | 0.0045 U | 0.0048 U | 0.0418 | 0.0084 J |
| METALS | BARIUM | MG/L | 0.162 J | 0.164 J | 0.206 | 0.345 | 0.173 J | 0.14 J | 0.176 J | 0.165 J | 0.169 J | 0.125 J | 0.159 J | 0.378 | 0.112 J | 0.12 J | 0.123 J | 0.209 | 0.141 J | 0.0749 J | 0.0826 J | 0.362 | 0.14 J |
| METALS | BERYLLIUM | MG/L | 0.00064 U | 0.00064 U | 0.00023 J | 0.00052 J | 0.00064 U | 0.0001 U | 0.00064 U | 0.001 U | 0.001 U | 0.0001 U | 0.00064 U | 0.00015 J | 0.00064 U | 0.0001 U | 0.00064 U | 0.00011 J | 0.00064 U | 0.0001 U | 0.00064 U | 0.0001 U | 0.00064 U |
| METALS | CADMIUM | MG/L | 0.00083 U | 0.00083 U | 0.001 J | 0.0031 J | 0.00083 U | 0.0002 U | 0.00083 U | 0.001 U | 0.001 U | 0.0002 U | 0.00083 U | 0.0002 U | 0.00083 U | 0.0002 U | 0.00083 U | 0.0002 U | 0.00083 U | 0.00044 J | 0.0012 J | 0.00042 J | 0.00083 U |
| METALS | CALCIUM | MG/L | 9.67 | 9.77 | 9.85 | 11.5 | 9.92 | 9.78 | 10.1 | 11.7 | 11.8 | 11.2 | 24.3 | 39.6 J | 9.06 | 10.8 J | 9.65 | 15.6 J | 13.3 | 30.7 J | 31.5 | 16.2 | 13.5 |
| METALS | CHROMIUM | MG/L | 0.002 U | 0.002 U | 0.0079 J | 0.0253 | 0.002 U | 0.0008 U | 0.0024 J | 0.00074 J | 0.00082 J | 0.0008 U | 0.002 U | 0.0026 J | 0.002 U | 0.0008 U | 0.002 U | 0.0045 J | 0.002 U | 0.0008 U | 0.0049 J | 0.0245 | 0.002 U |
| METALS | COBALT | MG/L | 0.0014 U | 0.0014 U | 0.0009 U | 0.0031 J | 0.0014 U | 0.0009 U | 0.0014 U | 0.001 U | 0.001 U | 0.0011 J | 0.0014 U | 0.0009 U | 0.0014 U | 0.0009 U | 0.0014 U | 0.0009 U | 0.0014 U | 0.0009 U | 0.0014 U | 0.0016 J | 0.0014 U |
| METALS | COPPER | MG/L | 0.005 U | 0.005 U | 0.0104 J | 0.0282 | 0.005 U | 0.0034 U | 0.005 U | 0.0011 J | 0.0011 J | 0.0034 U | 0.005 U | 0.0047 J | 0.005 U | 0.0034 U | 0.005 U | 0.0038 J | 0.0055 J | 0.0042 J | 0.0118 J | 0.0121 J | 0.0058 J |
| METALS | CYANIDE | MG/L | 0.00086 U | 0.00086 U | 0.0011 U | 0.0011 U | 0.00086 U | 0.0011 U | 0.00086 U | 0.0058 J | 0.0061 J | 0.0011 U | 0.0064 J | 0.0232 | 0.00086 U | 0.0011 U | 0.00086 U | 0.0248 | 0.00086 U | 0.0011 U | 0.00086 U | 0.0176 | 0.00086 U |
| METALS | IRON | MG/L | 1.51 | 1.47 | 8.71 | 22.7 | 1.28 | 1.36 | 1.36 | 1.7 | 1.68 | 1.04 | 1.58 | 1.44 | 1.15 | 0.63 | 1.49 | 0.942 | 1.23 | 2.3 | 3.62 | 4.39 | 1.15 |
| METALS | LEAD | MG/L | 0.0047 J | 0.0044 J | 0.0916 | 0.297 | 0.0026 J | 0.0028 J | 0.0024 U | 0.0095 | 0.0097 | 0.0037 | 0.0062 | 0.0282 | 0.0059 | 0.0035 | 0.0178 | 0.0607 | 0.0185 | 0.0048 | 0.0134 | 0.482 | 0.0194 |
| METALS | MAGNESIUM | MG/L | 1.89 J | 1.92 J | 1.87 J | 2.11 J | 1.95 J | 1.85 J | 1.99 J | 2.29 J | 2.3 J | 2.25 J | 4.07 J | 5.58 | 1.78 J | 2.05 J | 1.87 J | 2.61 J | 2.38 J | 7.51 | 8.09 | 2.76 J | 2.38 J |
| METALS | MANGANESE | MG/L | 0.0491 | 0.0485 | 0.0867 | 0.0871 | 0.0441 | 0.0297 | 0.0444 | 0.0514 | 0.0514 | 0.0376 | 0.102 | 0.194 | 0.0162 | 0.0153 | 0.0377 | 0.0428 | 0.0375 | 0.0758 | 0.0801 | 0.113 | 0.0343 |
| METALS | MERCURY | MG/L | 0.0001 U | 0.0001 U | 0.0001 U | 0.00012 J | 0.0001 U | 0.0001 U | 0.0001 U | 0.0002 U | 0.0002 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.00014 J | 0.0001 U | 0.00014 J | 0.0001 U | 0.0001 U |
| METALS | NICKEL | MG/L | 0.0015 U | 0.0026 J | 0.0036 J | 0.0102 J | 0.0024 J | 0.003 J | 0.0027 J | 0.04 U | 0.04 U | 0.0018 J | 0.0017 J | 0.0022 J | 0.0023 J | 0.0017 J | 0.0021 J | 0.0017 J | 0.0022 J | 0.0009 U | 0.0042 J | 0.0031 J | 0.0017 J |
| METALS | POTASSIUM | MG/L | 1.48 J | 1.52 J | 1.5 J | 1.61 J | 1.54 J | 1.52 J | 1.56 J | 1.95 J | 2 J | 2.18 J | 3.27 J | 4.46 J | 1.56 J | 2 J | 1.62 J | 2.34 J | 2.08 J | 3.09 J | 2.83 J | 2.4 J | 2.04 J |
| METALS | SELENIUM | MG/L | 0.0042 U | 0.0044 J | 0.0042 U | 0.0042 U | 0.0042 U | 0.0042 U | 0.0045 J | 0.005 U | 0.005 U | 0.0042 U | 0.0042 U | 0.0042 U | 0.0042 U | 0.0042 U | 0.0042 U | 0.0042 U | 0.0042 UJ | 0.0042 U | 0.0042 UJ | 0.0042 U | 0.0042 UJ |
| METALS | SILVER | MG/L | 0.0012 U | 0.0012 U | 0.0007 U | 0.0007 U | 0.0012 U | 0.0007 U | 0.0012 U | 0.001 U | 0.001 U | 0.0008 J | 0.0012 U | 0.0007 U | 0.0012 U | 0.0007 U | 0.0012 U | 0.0007 U | 0.0012 U | 0.0007 U | 0.0012 U | 0.0007 U | 0.0012 U |
| METALS | SODIUM | MG/L | 14.5 | 18 | 17.3 | 18.6 | 14.8 | 18 | 15.1 | 24.4 | 24.6 | 18.5 | 30 | 57.9 | 13.4 | 17.7 | 13.8 | 23.5 | 17.5 | 23.8 | 18 | 24.7 | 17 |
| METALS | THALLIUM | MG/L | 0.0046 U | 0.0046 U | 0.0044 U | 0.0044 U | 0.0056 J | 0.0044 U | 0.0046 U | 0.001 U | 0.001 U | 0.0044 U | 0.0046 U | 0.0044 U | 0.0046 U | 0.0044 U | 0.0046 U | 0.0044 U | 0.0046 U | 0.0044 U | 0.0046 U | 0.0044 U | 0.0046 U |
| METALS | VANADIUM | MG/L | 0.0012 U | 0.0012 U | 0.004 J | 0.0138 J | 0.0012 U | 0.00066 J | 0.0012 U | 0.005 U | 0.005 U | 0.0005 U | 0.0012 U | 0.0011 J | 0.0012 U | 0.00073 J | 0.0012 U | 0.00068 J | 0.0012 U | 0.0018 J | 0.0053 J | 0.0027 J | 0.0012 U |
| METALS | ZINC | MG/L | 0.0534 J | 0.0611 J | 0.135 | 0.362 J | 0.0538 | 0.0189 J | 0.0686 | 0.0143 J | 0.0145 J | 0.0212 | 0.019 J | 0.0298 J | 0.0383 | 0.0239 J | 0.0382 | 0.0252 J | 0.0278 | 0.0194 J | 0.0549 | 0.0772 J | 0.0234 |
| PEST/PCB | 4,4'-DDD | MG/L | 0.0001 U | 0.0001 U | 0.00012 U | 0.00011 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.000011 U | 0.000011 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.00011 U | 0.0001 U |
| PEST/PCB | 4,4'-DDE | MG/L | 0.0001 U | 0.0001 U | 0.00012 U | 0.00011 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.000011 U | 0.000011 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.00011 U | 0.0001 U |
| PEST/PCB | 4,4'-DDT | MG/L | 0.0001 U | 0.0001 U | 0.00012 U | 0.00011 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.000011 U | 0.000011 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.00011 U | 0.0001 U |
| PEST/PCB | ALDRIN | MG/L | 0.000051 U | 0.00005 U | 0.000059 U | 0.000055 U | 0.000054 U | 0.00005 U | 0.000051 U | 0.0000057 U | 0.00000016 J | 0.000053 U | 0.00005 U | 0.000053 U | 0.000051 U | 0.00005 U | 0.00005 U | 0.000051 U | 0.000052 U | 0.000052 U | 0.000053 U | 0.000056 U | 0.000053 U |
| PEST/PCB | ALPHA-BHC | MG/L | 0.000051 U | 0.00005 U | 0.000059 U | 0.000055 U | 0.000054 U | 0.00005 U | 0.000051 U | 0.0000057 U | 0.0000053 U | 0.000053 U | 0.00005 U | 0.000053 U | 0.000051 U | 0.00005 U | 0.00005 U | 0.000051 U | 0.000052 U | 0.000052 U | 0.000053 U | 0.000056 U | 0.000053 U |
| PEST/PCB | ALPHA-CHLORDANE | MG/L | 0.000051 U | 0.00005 U | 0.000059 U | 0.000055 U | 0.000054 U | 0.00005 U | 0.000051 U | 0.0000057 U | 0.0000053 U | 0.000053 U | 0.00005 U | 0.000053 U | 0.000051 U | 0.00005 U | 0.00005 U | 0.000051 U | 0.000052 U | 0.000052 U | 0.000053 U | 0.000056 U | 0.000053 U |
| PEST/PCB | AROCLOR-1016 | MG/L | 0.001 U | 0.001 U | 0.0012 U | 0.0011 U | 0.0011 U | 0.001 U | 0.001 U | | | 0.0011 U | 0.001 U | 0.0011 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.0011 U | 0.001 U |
| PEST/PCB | AROCLOR-1221 | MG/L | 0.002 U | 0.002 U | 0.0024 U | 0.0022 U | 0.0022 U | 0.002 U | 0.002 U | | | 0.0021 U | 0.002 U | 0.0021 U | 0.002 U | 0.002 U | 0.002 U | 0.002 U | 0.0021 U | 0.0021 U | 0.0021 U | 0.0022 U | 0.0021 U |
| PEST/PCB | AROCLOR-1232 | MG/L | 0.001 U | 0.001 U | 0.0012 U | 0.0011 U | 0.0011 U | 0.001 U | 0.001 U | | | 0.0011 U | 0.001 U | 0.0011 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.0011 U | 0.001 U |
| PEST/PCB | AROCLOR-1242 | MG/L | 0.001 U | 0.001 U | 0.0012 U | 0.0011 U | 0.0011 U | 0.001 U | 0.001 U | | | 0.0011 U | 0.001 U | 0.0011 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.0011 U | 0.001 U |
| PEST/PCB | AROCLOR-1248 | MG/L | 0.001 U | 0.001 U | 0.0012 U | 0.0011 U | 0.0011 U | 0.001 U | 0.001 U | | | 0.0011 U | 0.001 U | 0.0011 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.0011 U | 0.001 U |
| PEST/PCB | AROCLOR-1254 | MG/L | 0.001 U | 0.001 U | 0.0012 U | 0.0011 U | 0.0011 U | 0.001 U | 0.001 U | | | 0.0011 U | 0.001 U | 0.0011 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.0011 U | 0.001 U |
| PEST/PCB | AROCLOR-1260 | MG/L | 0.001 U | 0.001 U | 0.0012 U | 0.0011 U | 0.0011 U | 0.001 U | 0.001 U | | | 0.0011 U | 0.001 U | 0.0011 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.0011 U | 0.001 U |
| PEST/PCB | AROCLOR-1262 | MG/L | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1268 | MG/L | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | BETA-BHC | MG/L | 0.000051 U | 0.00005 U | 0.000059 U | 0.000055 U | 0.000054 U | 0.00005 U | 0.000051 U | 0.0000057 U | 0.0000053 U | 0.000053 U | 0.00005 U | 0.000053 U | 0.000051 U | 0.00005 U | 0.00005 U | 0.000051 U | 0.000052 U | 0.000052 U | 0.000053 U | 0.000056 U | 0.000053 U |
| PEST/PCB | DELTA-BHC | MG/L | 0.000051 U | 0.00005 U | 0.000059 U | 0.000055 U | 0.000054 U | 0.00005 U | 0.000051 U | 0.0000057 U | 0.0000053 U | 0.000053 U | 0.00005 U | 0.000053 U | 0.000051 U | 0.00005 U | 0.00005 U | 0.000051 U | 0.000052 U | 0.000052 U | 0.000053 U | 0.000056 U | 0.000053 U |
| PEST/PCB | DIELDRIN | MG/L | 0.0001 U | 0.0001 U | 0.00012 U | 0.00011 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.00000031 J | 0.00000032 J | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.00011 U | 0.0001 U |
| PEST/PCB | ENDOSULFAN I | MG/L | 0.000051 U | 0.00005 U | 0.000059 U | 0.000055 U | 0.000054 U | 0.00005 U | 0.000051 U | 0.0000057 U | 0.0000053 U | 0.000053 U | 0.00005 U | 0.000053 U | 0.000051 U | 0.00005 U | 0.00005 U | 0.000051 U | 0.000052 U | 0.000052 U | 0.000053 U | 0.000056 U | 0.000053 U |
| PEST/PCB | ENDOSULFAN II | MG/L | 0.0001 U | 0.0001 U | 0.00012 U | 0.00011 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.000011 U | 0.000011 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.00011 U | 0.0001 U |
| PEST/PCB | ENDOSULFAN SULFATE | MG/L | 0.0001 U | 0.0001 U | 0.00012 U | 0.00011 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.000011 U | 0.000011 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.00011 U | 0.0001 U |
| PEST/PCB | ENDRIN | MG/L | 0.0001 U | 0.0001 U | 0.00012 U | 0.00011 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.000011 U | 0.000011 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.00011 U | 0.0001 U |
| PEST/PCB | ENDRIN ALDEHYDE | MG/L | 0.0001 U | 0.0001 U | 0.00012 U | 0.00011 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.000011 U | 0.000011 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.00011 U | 0.0001 U |
| PEST/PCB | ENDRIN KETONE | MG/L | 0.0001 U | 0.0001 U | 0.00012 U | 0.00011 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.000011 U | 0.000011 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.00011 U | 0.0001 U |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/L | 0.000051 U | 0.00005 U | 0.000059 U | 0.000055 U | 0.000054 U | 0.00005 U | 0.000051 U | 0.0000057 U | 0.0000053 U | 0.000053 U | 0.00005 U | 0.000053 U | 0.000051 U | 0.00005 U | 0.00005 U | 0.000051 U | 0.000052 U | 0.000052 U | 0.000053 U | 0.000056 U | 0.000053 U |
| PEST/PCB | GAMMA-CHLORDANE | MG/L | 0.000051 U | 0.00005 U | 0.000059 U | 0.000055 U | 0.000054 U | 0.00005 U | 0.000051 U | 0.0000057 U | 0.0000053 U | 0.000053 U | 0.00005 U | 0.000053 U | 0.000051 U | 0.00005 U | 0.00005 U | 0.000051 U | 0.000052 U | 0.000052 U | 0.000053 U | 0.000056 U | 0.000053 U |
| PEST/PCB | HEPTACHLOR | MG/L | 0.000051 U | 0.00005 U | 0.000059 U | 0.000055 U | 0.000054 U | 0.00005 U | 0.000051 U | 0.0000057 U | 0.00000017 J | 0.000053 U | 0.00005 U | 0.000053 U | 0.000051 U | 0.00005 U | 0.00005 U | 0.000051 U | 0.000052 U | 0.000052 U | 0.000053 U | 0.000056 U | 0.000053 U |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/L | 0.000051 U | 0.00005 U | 0.000059 U | 0.000055 U | 0.000054 U | 0.00005 U | 0.000051 U | 0.0000057 U | 0.0000053 U | 0.000053 U | 0.00005 U | 0.000053 U | 0.000051 U | 0.00005 U | 0.00005 U | 0.000051 U | 0.000052 U | 0.000052 U | 0.000053 U | 0.000056 U | 0.000053 U |
| PEST/PCB | METHOXYCHLOR | MG/L | 0.00051 U | 0.0005 U | 0.00059 U | 0.00055 U | 0.00054 U | 0.0005 U | 0.00051 U | 0.000057 U | 0.000053 U | 0.00053 U | 0.0005 U | 0.00053 U | 0.00051 U | 0.0005 U | 0.0005 U | 0.00051 U | 0.00052 U | 0.00052 U | 0.00053 U | 0.00056 U | 0.00053 U |
| PEST/PCB | TOXAPHENE | MG/L | 0.0051 U | 0.005 U | 0.0059 U | 0.0055 U | 0.0054 U | 0.005 U | 0.0051 U | 0.00057 U | 0.00053 U | 0.0053 U | 0.005 U | 0.0053 U | 0.0051 U | 0.005 U | 0.005 U | 0.0051 U | 0.0052 U | 0.0052 U | 0.0053 U | 0.0056 U | 0.0053 U |
| SVOC | 1,1'-BIPHENYL | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 1,2,4,5-TETRACHLOROBENZENE | MG/L | | | | | | | | 0.0055 U | 0.0053 U | | | | | | | | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 2,3,4,6-TETRACHLOROPHENOL | MG/L | | | | | | | | 0.0055 UJ | 0.0053 UJ | | | | | | | | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/L | 0.025 U | 0.025 U | 0.026 U | 0.025 U | 0.025 U | 0.026 U | 0.025 U | 0.0055 UJ | 0.0053 UJ | 0.025 U | 0.026 U | 0.026 U | 0.025 U | 0.026 U | 0.025 U | 0.025 U | 0.025 U | 0.028 U | 0.025 U | 0.025 U | 0.025 U |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 2,4-DICHLOROPHENOL | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 2,4-DIMETHYLPHENOL | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.00084 J | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 2,4-DINITROPHENOL | MG/L | 0.025 U | 0.025 U | 0.026 U | 0.025 UJ | 0.025 U | 0.026 UJ | 0.025 U | 0.011 U | 0.011 U | 0.025 U | 0.026 U | 0.026 U | 0.025 U | 0.026 U | 0.025 U | 0.025 U | 0.025 U | 0.028 U | 0.025 U | 0.025 UJ | 0.025 U |
| SVOC | 2,4-DINITROTOLUENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 UJ | 0.0053 UJ | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 2,6-DINITROTOLUENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 2-CHLORONAPHTHALENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 2-CHLOROPHENOL | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 2-METHYLNAPHTHALENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0000033 J | 0.00011 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 2-METHYLPHENOL | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 2-NITROANILINE | MG/L | 0.025 U | 0.025 U | 0.026 U | 0.025 U | 0.025 U | 0.026 U | 0.025 U | 0.011 U | 0.011 U | 0.025 U | 0.026 U | 0.026 U | 0.025 U | 0.026 U | 0.025 U | 0.025 U | 0.025 U | 0.028 U | 0.025 U | 0.025 U | 0.025 U |
| SVOC | 2-NITROPHENOL | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 3-NITROANILINE | MG/L | 0.025 U | 0.025 U | 0.026 U | 0.025 U | 0.025 U | 0.026 U | 0.025 U | 0.011 U | 0.011 U | 0.025 U | 0.026 U | 0.026 U | 0.025 U | 0.026 U | 0.025 U | 0.025 U | 0.025 U | 0.028 U | 0.025 U | 0.025 U | 0.025 U |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/L | 0.025 U | 0.025 U | 0.026 U | 0.025 U | 0.025 U | 0.026 U | 0.025 U | 0.011 U | 0.011 U | 0.025 U | 0.026 U | 0.026 U | 0.025 U | 0.026 U | 0.025 U | 0.025 U | 0.025 U | 0.028 U | 0.025 U | 0.025 U | 0.025 U |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 4-CHLOROANILINE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 4-METHYLPHENOL | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | 4-NITROANILINE | MG/L | 0.025 U | 0.025 U | 0.026 U | 0.025 U | 0.025 U | 0.026 U | 0.025 U | 0.011 U | 0.011 U | 0.025 U | 0.026 U | 0.026 U | 0.025 U | 0.026 U | 0.025 U | 0.025 U | 0.025 U | 0.028 U | 0.025 U | 0.025 U | 0.025 U |
| SVOC | 4-NITROPHENOL | MG/L | 0.025 U | 0.025 U | 0.026 U | 0.025 U | 0.025 U | 0.026 U | 0.025 U | 0.011 U | 0.011 U | 0.025 U | 0.026 U | 0.026 U | 0.025 U | 0.026 U | 0.025 U | 0.025 U | 0.025 U | 0.028 U | 0.025 U | 0.025 U | 0.025 U |
| SVOC | ACENAPHTHENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.00011 U | 0.00011 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | ACENAPHTHYLENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.00011 U | 0.00011 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | ACETOPHENONE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | ANTHRACENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.00011 U | 0.00011 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | ATRAZINE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | BENZALDEHYDE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | BENZO(A)ANTHRACENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.00011 U | 0.00011 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | BENZO(A)PYRENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.00012 U | 0.00012 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | BENZO(B)FLUORANTHENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.00011 U | 0.00011 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | BENZO(G,H,I)PERYLENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.00011 U | 0.00011 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |

**Table 3 Surface Water Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | BWL | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | BWDW0007 | BWDW0008 | BWDW0008 | BWDW0009 | BWDW0009 | BWDW0010 | BWDW0010 | BWDW0010 | BWDW0010 | HCDW0006 | HCDW0006 | HCDW0007 | HCDW0007 | HCDW0008 | HCDW0008 | HCDW0009 | HCDW0009 | HCDW0010 | HCDW0010 | HCDW0011 | HCDW0011 |
| | | Field Sample ID | BWDW0007-SW-AG-R2-0 | BWDW0008-SW-AB-R2-0 | BWDW0008-SW-AB-R1-0 | BWDW0009-SW-AB-R1-0 | BWDW0009-SW-AB-R2-0 | BWDW0010-SW-AB-R1-0 | BWDW0010-SW-AB-R2-0 | BWDW0010-SW-AB-R5-0 | BWDW0010-SW-AB-R5-1 | HCDW0006-SW-AA-R1-0 | HCDW0006-SW-AA-R2-0 | HCDW0007-SW-AA-R1-0 | HCDW0007-SW-AA-R2-0 | HCDW0008-SW-AA-R1-0 | HCDW0008-SW-AA-R2-0 | HCDW0009-SW-AA-R1-0 | HCDW0009-SW-AA-R2-0 | HCDW0010-SW-AA-R1-0 | HCDW0010-SW-AA-R2-0 | HCDW0011-SW-AA-R1-0 | HCDW0011-SW-AA-R2-0 |
| | | Sample Date | 10/17/2005 | 10/17/2005 | 9/12/2005 | 9/12/2005 | 10/18/2005 | 9/12/2005 | 10/18/2005 | 7/5/2011 | 7/5/2011 | 9/14/2005 | 10/20/2005 | 9/13/2005 | 10/20/2005 | 9/13/2005 | 10/20/2005 | 9/13/2005 | 10/19/2005 | 9/13/2005 | 10/19/2005 | 9/12/2005 | 10/19/2005 |
| | | Depth (ft) | 3 | 0.5 | 0.5-1 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5-1 | 0.5-1 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(K)FLUORANTHENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.00011 U | 0.00011 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | BENZYL BUTYL PHTHALATE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | CAPROLACTAM | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | CARBAZOLE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | CHRYSENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0000041 J | 0.0000033 J | 0.01 U | 0.01 U | 0.0003 J | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.00011 U | 0.00011 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | DIBENZOFURAN | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | DIETHYLPHTHALATE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | DIMETHYLPHTHALATE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | DI-N-BUTYLPHTHALATE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | DI-N-OCTYLPHTHALATE | MG/L | 0.01 UJ | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | FLUORANTHENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.0002 J | 0.01 U | 0.01 U | 0.01 U | 0.0000071 J | 0.0000075 J | 0.01 U | 0.01 U | 0.0005 J | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | FLUORENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.00011 U | 0.00011 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | HEXACHLOROBENZENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | HEXACHLOROBUTADIENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | HEXACHLOROETHANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.00011 U | 0.00011 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | ISOPHORONE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | NAPHTHALENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.00011 U | 0.00011 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | NITROBENZENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | N-NITROSODIPHENYLAMINE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | PENTACHLOROPHENOL | MG/L | 0.025 U | 0.025 U | 0.026 U | 0.025 U | 0.025 U | 0.026 U | 0.025 U | 0.00022 U | 0.00021 U | 0.025 U | 0.026 U | 0.026 U | 0.025 U | 0.026 U | 0.025 U | 0.025 U | 0.025 U | 0.028 U | 0.025 U | 0.025 U | 0.025 U |
| SVOC | PHENANTHRENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.00011 U | 0.00011 U | 0.01 U | 0.01 U | 0.0002 J | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | PHENOL | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0055 U | 0.0053 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | PYRENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.00011 U | 0.00011 U | 0.01 U | 0.01 U | 0.0005 J | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 1,1,1-TRICHLOROETHANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 1,1,2-TRICHLOROETHANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 1,1-DICHLOROETHANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 1,1-DICHLOROETHENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 1,2,3-TRICHLOROBENZENE | MG/L | | | | | | | | 0.0005 U | 0.0005 U | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/L | 0.01 U | 0.01 U | 0.01 UJ | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 UJ | 0.01 UJ | 0.01 UJ |
| VOC | 1,2-DIBROMOETHANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 1,2-DICHLOROBENZENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 1,2-DICHLOROETHANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 1,2-DICHLOROPROPANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 1,3-DICHLOROBENZENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 1,4-DICHLOROBENZENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 2-HEXANONE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.005 U | 0.005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 4-METHYL-2-PENTANONE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.005 U | 0.005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | ACETONE | MG/L | 0.01 U | 0.01 UJ | 0.01 U | 0.01 | 0.01 U | 0.01 U | 0.01 U | 0.005 U | 0.005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | BENZENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | BROMOCHLOROMETHANE | MG/L | | | | | | | | 0.0005 U | 0.0005 U | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | BROMOFORM | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | BROMOMETHANE | MG/L | 0.01 U | 0.01 U | 0.01 UJ | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 UJ | 0.01 U |
| VOC | CARBON DISULFIDE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | CARBON TETRACHLORIDE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | CHLOROBENZENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | CHLOROETHANE | MG/L | 0.01 U | 0.01 UJ | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | CHLOROFORM | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.002 J | 0.01 U | 0.01 U | 0.01 U |
| VOC | CHLOROMETHANE | MG/L | 0.01 UJ | 0.01 UJ | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 UJ | 0.01 UJ | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | CIS-1,2-DICHLOROETHENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | CYCLOHEXANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | DIBROMOCHLOROMETHANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | DICHLORODIFLUOROMETHANE | MG/L | 0.01 U | 0.01 U | 0.01 UJ | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 UJ | 0.01 UJ | 0.01 UJ |
| VOC | DICHLOROMETHANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | ETHYLBENZENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | ISOPROPYLBENZENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | METHYL ACETATE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | METHYL ETHYL KETONE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.005 U | 0.005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | METHYLCYCLOHEXANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | STYRENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | TETRACHLOROETHENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | TOLUENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/L | 0.01 U | 0.01 U | 0.01 UJ | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.0005 U | 0.0005 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 UJ | 0.01 U |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | TRICHLOROETHYLENE (TCE) | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | TRICHLOROFLUOROMETHANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | VINYL CHLORIDE | MG/L | 0.01 UJ | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0005 U | 0.0005 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | XYLENE, O- | MG/L | | | | | | | | 0.0005 U | 0.0005 U | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | XYLENES, M & P | MG/L | | | | | | | | 0.0005 U | 0.0005 U | | | | | | | | | | | | |

**Table 3 Surface Water Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | KWL | KWL | KWL | KWL | KWL | KWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCDW0012 | HCDW0012 | HCDW0013 | HCDW0013 | HCDW0014 | HCDW0014 | HCDW0015 | HCDW0015 | HCDW0016 | HCDW0016 | HCDW0017 | HCDW0017 | HCDW0017 | HCDW0018 | HCDW0018 | HCDW0019 | HCDW0019 | KWDW0002 | KWDW0003 | KWDW0004 | KWDW0005 |
| | | Field Sample ID | HCDW0012-SW-AA-R1-0 | HCDW0012-SW-AA-R2-0 | HCDW0013-SW-AA-R1-0 | HCDW0013-SW-AA-R2-0 | HCDW0014-SW-AA-R1-0 | HCDW0014-SW-AA-R2-0 | HCDW0015-SW-AA-R1-0 | HCDW0015-SW-AA-R2-0 | HCDW0016-SW-AA-R1-0 | HCDW0016-SW-AA-R2-0 | HCDW0017-SW-AA-R1-0 | HCDW0017-SW-AA-R2-0 | HCDW0017-SW-AA-R1-1 | HCDW0018-SW-AA-R1-0 | HCDW0018-SW-AA-R2-0 | HCDW0019-SW-AA-R1-0 | HCDW0019-SW-AA-R2-0 | KWDW0002-SW-AB-R1-0 | KWDW0003-SW-AE-R1-0 | KWDW0004-SW-AD-R1-0 | KWDW0005-SW-AD-R1-0 |
| | | Sample Date | 9/12/2005 | 10/19/2005 | 9/12/2005 | 10/19/2005 | 9/12/2005 | 10/19/2005 | 9/12/2005 | 10/19/2005 | 9/14/2005 | 10/19/2005 | 9/13/2005 | 10/18/2005 | 9/13/2005 | 9/13/2005 | 10/18/2005 | 9/13/2005 | 10/18/2005 | 10/31/2007 | 10/31/2007 | 10/31/2007 | 10/31/2007 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0.5 | 2 | 1.5 | 1.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/L | 0.472 | 0.13 J | 0.025 J | 0.109 J | 0.0185 U | 0.107 J | 0.0185 U | 0.97 | 0.0196 J | 1.21 | 0.0449 J | 1.82 | 0.0444 J | 13.8 J | 1.39 | 0.737 J | 2.64 | 0.214 | 0.23 | 0.215 | 0.157 J |
| METALS | ANTIMONY | MG/L | 0.0027 U | 0.0047 U | 0.0027 U | 0.0047 U | 0.0027 U | 0.0047 U | 0.0027 U | 0.0047 U | 0.0027 U | 0.0047 U | 0.0027 U | 0.0047 U | 0.0027 U | 0.0038 J | 0.0047 U | 0.0037 J | 0.0047 U | 0.0033 U | 0.0033 U | 0.0033 U | 0.0033 U |
| METALS | ARSENIC | MG/L | 0.0686 J | 0.0078 J | 0.0094 J | 0.0096 J | 0.0104 | 0.0087 J | 0.0444 | 0.035 | 0.046 J | 0.0246 | 0.0436 | 0.017 | 0.0437 | 0.329 | 0.0272 | 0.0309 | 0.0227 | 0.0089 J | 0.0074 J | 0.0093 J | 0.0094 J |
| METALS | BARIUM | MG/L | 0.421 | 0.142 J | 0.204 | 0.138 J | 0.202 | 0.137 J | 0.203 | 0.13 J | 0.204 | 0.124 J | 0.164 J | 0.113 J | 0.169 J | 1.47 | 0.155 J | 0.17 J | 0.121 J | 0.0923 J | 0.0949 J | 0.0966 J | 0.0957 J |
| METALS | BERYLLIUM | MG/L | 0.0001 U | 0.00064 U | 0.0001 U | 0.00064 U | 0.0001 U | 0.00064 U | 0.0001 U | 0.00064 U | 0.0001 U | 0.00064 U | 0.0001 U | 0.00064 U | 0.0001 U | 0.0016 J | 0.00064 U | 0.00021 J | 0.00064 U | 0.0002 U | 0.0002 U | 0.0002 U | 0.0002 U |
| METALS | CADMIUM | MG/L | 0.0002 U | 0.00083 U | 0.0002 U | 0.00083 U | 0.0002 U | 0.00083 U | 0.0002 U | 0.00083 U | 0.0002 U | 0.00083 U | 0.0002 U | 0.00083 U | 0.0002 U | 0.0199 | 0.00083 U | 0.0002 U | 0.00083 U | 0.0004 U | 0.0004 U | 0.0004 U | 0.0004 U |
| METALS | CALCIUM | MG/L | 16.5 | 14.3 | 15.8 | 14.9 | 17.4 | 15.3 | 18.9 | 16 | 20.4 | 16 | 18.2 J | 15.6 | 19.1 | 41.7 | 16.1 | 17.7 J | 15.4 | 14.2 | 14.6 | 14.7 | 14.9 |
| METALS | CHROMIUM | MG/L | 0.0624 | 0.0028 J | 0.0021 J | 0.002 U | 0.0027 J | 0.002 U | 0.0014 J | 0.0054 J | 0.00085 J | 0.0043 J | 0.0008 U | 0.0032 J | 0.0008 U | 0.259 | 0.0165 | 0.0083 J | 0.0062 J | 0.0023 U | 0.0023 U | 0.0023 U | 0.0023 U |
| METALS | COBALT | MG/L | 0.00111 J | 0.002 J | 0.0009 U | 0.0014 U | 0.0009 U | 0.0014 U | 0.0009 U | 0.0018 J | 0.00099 J | 0.0014 U | 0.0009 U | 0.0014 U | 0.0009 U | 0.0166 J | 0.0014 U | 0.0009 U | 0.0016 J | 0.0023 U | 0.0023 U | 0.0023 U | 0.0023 U |
| METALS | COPPER | MG/L | 0.0283 | 0.0056 J | 0.0034 U | 0.0065 J | 0.005 J | 0.0061 J | 0.0034 U | 0.0101 J | 0.0061 J | 0.0103 J | 0.0034 U | 0.0058 J | 0.0034 U | 0.186 | 0.0143 J | 0.0089 J | 0.0072 J | 0.0024 J | 0.0027 J | 0.0031 J | 0.0029 J |
| METALS | CYANIDE | MG/L | 0.0203 | 0.00086 U | 0.0103 | 0.00086 U | 0.018 | 0.00086 U | 0.009 J | 0.00086 U | 0.0011 U | 0.00086 U | 0.0011 U | 0.00086 U | 0.0011 U | 0.0065 J | 0.00086 U | 0.0011 U | 0.00086 U | 0.0006 U | 0.0006 U | 0.0006 U | 0.0006 U |
| METALS | IRON | MG/L | 7.4 | 1.2 | 0.571 | 1.13 | 0.729 | 1.15 | 2.14 | 3.18 | 2.38 | 3.27 | 3.37 | 3.58 | 3.48 | 57.1 | 4.8 | 3.61 | 5.47 | 1.16 | 1.19 | 1.15 | 1.07 |
| METALS | LEAD | MG/L | 0.932 | 0.0362 | 0.0627 | 0.0205 | 0.0682 | 0.0199 | 0.0169 | 0.078 | 0.0112 | 0.0502 | 0.0115 | 0.0201 | 0.011 | 3.99 | 0.154 | 0.0768 | 0.0326 | 0.0155 | 0.0171 | 0.0165 | 0.0153 |
| METALS | MAGNESIUM | MG/L | 2.83 J | 2.62 J | 2.77 J | 2.61 J | 2.94 J | 2.67 J | 3.27 J | 2.96 J | 3.35 J | 2.94 J | 3.02 J | 3.02 J | 3.02 J | 5.83 | 2.88 J | 2.84 J | 2.85 J | 2.66 J | 2.74 J | 2.8 J | 2.81 J |
| METALS | MANGANESE | MG/L | 0.217 | 0.0367 | 0.0479 | 0.036 | 0.0588 | 0.0383 | 0.166 | 0.122 | 0.149 | 0.0877 | 0.105 | 0.0508 | 0.108 | 0.955 | 0.0774 | 0.151 | 0.0799 | 0.0505 | 0.05 | 0.0477 | 0.0445 |
| METALS | MERCURY | MG/L | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 J | 0.0001 U | 0.00011 J | 0.00011 J | 0.0001 U | 0.0001 U | 0.00016 J | 0.0001 U | 0.0001 U | 0.0001 U | 0.00099 | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U |
| METALS | NICKEL | MG/L | 0.003 J | 0.0025 J | 0.0016 J | 0.0016 J | 0.0016 J | 0.0015 J | 0.0032 J | 0.0032 J | 0.0009 U | 0.0024 J | 0.002 J | 0.0023 J | 0.0009 U | 0.0367 J | 0.0034 J | 0.0034 J | 0.0044 J | 0.001 J | 0.0014 J | 0.0009 U | 0.0016 J |
| METALS | POTASSIUM | MG/L | 2.41 J | 2.09 J | 2.36 J | 2.15 J | 2.37 J | 2.15 J | 2.06 J | 2.27 J | 2.09 J | 2.33 J | 1.86 J | 2.28 J | 2.01 J | 4.65 J | 2.17 J | 1.74 J | 2.23 J | 3 J | 3.04 J | 3.09 J | 3 J |
| METALS | SELENIUM | MG/L | 0.0042 U | 0.0042 UJ | 0.0042 UJ | 0.0042 UJ | 0.0042 U | 0.0042 UJ | 0.0042 U | 0.0042 UJ | 0.0042 U | 0.0042 U | 0.0042 U | 0.0042 U | 0.0042 U | 0.0042 UJ | 0.0042 U | 0.0042 U | 0.0042 U | 0.0045 U | 0.0045 U | 0.0045 U | 0.0045 U |
| METALS | SILVER | MG/L | 0.0007 U | 0.0012 J | 0.0007 U | 0.0012 U | 0.0007 U | 0.0012 U | 0.0007 U | 0.0012 U | 0.0007 U | 0.0012 U | 0.0007 U | 0.0012 U | 0.0007 U | 0.0017 J | 0.0012 U | 0.0007 U | 0.0012 U | 0.0009 U | 0.0009 U | 0.0009 U | 0.0009 U |
| METALS | SODIUM | MG/L | 24.1 | 17.6 | 24.5 | 17.5 | 25.2 | 17.8 | 25.3 | 16.6 | 25.1 | 16.7 | 22.6 | 15.5 | 22.5 | 26.4 | 16.1 | 21 | 15.2 | 16 | 16.6 | 17 | 17.3 |
| METALS | THALLIUM | MG/L | 0.0044 U | 0.0046 U | 0.0044 U | 0.0046 U | 0.0044 U | 0.0046 U | 0.0044 U | 0.0046 U | 0.0044 U | 0.0054 J | 0.0044 U | 0.0046 U | 0.0044 U | 0.0044 U | 0.0046 U | 0.0044 U | 0.0058 J | 0.0051 UJ | 0.0051 UJ | 0.0051 UJ | 0.0051 UJ |
| METALS | VANADIUM | MG/L | 0.0026 J | 0.0012 J | 0.001 J | 0.0012 U | 0.0005 U | 0.0012 U | 0.0005 U | 0.0032 J | 0.0005 U | 0.0032 J | 0.00053 J | 0.0048 J | 0.0005 U | 0.0323 J | 0.0039 J | 0.0017 J | 0.0068 J | 0.0022 U | 0.0022 U | 0.0022 U | 0.0022 U |
| METALS | ZINC | MG/L | 0.0689 J | 0.0291 | 0.0105 J | 0.0261 | 0.0109 J | 0.0312 | 0.0105 J | 0.0329 | 0.0081 J | 0.0295 | 0.0126 J | 0.0272 | 0.0054 J | 2.2 J | 0.0712 | 0.0416 | 0.0384 | 0.0045 J | 0.0036 J | 0.0035 J | 0.0032 J |
| PEST/PCB | 4,4'-DDD | MG/L | 0.00011 U | 0.0001 U | 0.00011 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.00011 U | 0.0001 U | R | 0.0001 U | 0.0001 U | 0.00011 U | 0.00011 U | 0.0001 U | 0.00011 U | 0.0001 U | 0.0001 U | | | | |
| PEST/PCB | 4,4'-DDE | MG/L | 0.00011 U | 0.0001 U | 0.00011 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.00011 U | 0.0001 U | R | 0.0001 U | 0.0001 U | 0.00011 U | 0.00011 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.0001 U | | | | |
| PEST/PCB | 4,4'-DDT | MG/L | 0.00011 U | 0.0001 U | 0.00011 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.00011 U | 0.0001 U | R | 0.0001 U | 0.0001 U | 0.00011 U | 0.00011 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.0001 U | | | | |
| PEST/PCB | ALDRIN | MG/L | 0.000056 U | 0.000051 U | 0.000056 U | 0.000055 U | 0.000052 U | 0.000053 U | 0.000053 U | 0.000052 U | R | 0.00005 U | 0.000053 U | 0.000053 U | 0.000056 U | 0.000054 U | 0.000052 U | 0.000052 U | 0.00005 U | | | | |
| PEST/PCB | ALPHA-BHC | MG/L | 0.000056 U | 0.000051 U | 0.000056 U | 0.000055 U | 0.000052 U | 0.000053 U | 0.000053 U | 0.000052 U | R | 0.00005 U | 0.000053 U | 0.000053 U | 0.000056 U | 0.000054 U | 0.000052 U | 0.000052 U | 0.00005 U | | | | |
| PEST/PCB | ALPHA-CHLORDANE | MG/L | 0.000056 U | 0.000051 U | 0.000056 U | 0.000055 U | 0.000052 U | 0.000053 U | 0.000053 U | 0.000052 U | R | 0.00005 U | 0.000053 U | 0.000053 U | 0.000056 U | 0.000054 U | 0.000052 U | 0.000052 U | 0.00005 U | | | | |
| PEST/PCB | AROCLOR-1016 | MG/L | 0.0011 U | 0.001 U | 0.0011 U | 0.0011 U | 0.001 U | 0.001 U | 0.0011 U | 0.001 U | R | 0.001 U | 0.001 U | 0.0011 U | 0.0011 U | 0.0011 U | 0.001 U | 0.001 U | 0.001 U | 0.00062 U | 0.0005 U | 0.00051 U | 0.00051 U |
| PEST/PCB | AROCLOR-1221 | MG/L | 0.0022 U | 0.002 U | 0.0022 U | 0.0022 U | 0.0021 U | 0.0021 U | 0.0021 U | 0.0021 U | R | 0.002 U | 0.0021 U | 0.0021 U | 0.0022 U | 0.0022 U | 0.0021 U | 0.0021 U | 0.002 U | 0.00062 U | 0.0005 U | 0.00051 U | 0.00051 U |
| PEST/PCB | AROCLOR-1232 | MG/L | 0.0011 U | 0.001 U | 0.0011 U | 0.0011 U | 0.001 U | 0.001 U | 0.0011 U | 0.001 U | R | 0.001 U | 0.001 U | 0.0011 U | 0.0011 U | 0.0011 U | 0.001 U | 0.001 U | 0.001 U | 0.00062 U | 0.0005 U | 0.00051 U | 0.00051 U |
| PEST/PCB | AROCLOR-1242 | MG/L | 0.0011 U | 0.001 U | 0.0011 U | 0.0011 U | 0.001 U | 0.001 U | 0.0011 U | 0.001 U | R | 0.001 U | 0.001 U | 0.0011 U | 0.0011 U | 0.0011 U | 0.001 U | 0.001 U | 0.001 U | 0.00062 U | 0.0005 U | 0.00051 U | 0.00051 U |
| PEST/PCB | AROCLOR-1248 | MG/L | 0.0011 U | 0.001 U | 0.0011 U | 0.0011 U | 0.001 U | 0.001 U | 0.0011 U | 0.001 U | R | 0.001 U | 0.001 U | 0.0011 U | 0.0011 U | 0.0011 U | 0.001 U | 0.001 U | 0.001 U | 0.00062 U | 0.0005 U | 0.00051 U | 0.00051 U |
| PEST/PCB | AROCLOR-1254 | MG/L | 0.0011 U | 0.001 U | 0.0011 U | 0.0011 U | 0.001 U | 0.001 U | 0.0011 U | 0.001 U | R | 0.001 U | 0.001 U | 0.0011 U | 0.0011 U | 0.0011 U | 0.001 U | 0.001 U | 0.001 U | 0.00062 U | 0.0005 U | 0.00051 U | 0.00051 U |
| PEST/PCB | AROCLOR-1260 | MG/L | 0.0011 U | 0.001 U | 0.0011 U | 0.0011 U | 0.001 U | 0.001 U | 0.0011 U | 0.001 U | R | 0.001 U | 0.001 U | 0.0011 U | 0.0011 U | 0.0011 U | 0.001 U | 0.001 U | 0.001 U | 0.00062 U | 0.0005 U | 0.00051 U | 0.00051 U |
| PEST/PCB | AROCLOR-1262 | MG/L | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | AROCLOR-1268 | MG/L | | | | | | | | | | | | | | | | | | | | | |
| PEST/PCB | BETA-BHC | MG/L | 0.000056 U | 0.000051 U | 0.000056 U | 0.000055 U | 0.000052 U | 0.000053 U | 0.000053 U | 0.000052 U | R | 0.00005 U | 0.000053 U | 0.000053 U | 0.000056 U | 0.000054 U | 0.000052 U | 0.000052 U | 0.00005 U | | | | |
| PEST/PCB | DELTA-BHC | MG/L | 0.000056 U | 0.000051 U | 0.000056 U | 0.000055 U | 0.000052 U | 0.000053 U | 0.000053 U | 0.000052 U | R | 0.00005 U | 0.000053 U | 0.000053 U | 0.000056 U | 0.000054 U | 0.000052 U | 0.000052 U | 0.00005 U | | | | |
| PEST/PCB | DIELDRIN | MG/L | 0.00011 U | 0.0001 U | 0.00011 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.00011 U | 0.0001 U | R | 0.0001 U | 0.0001 U | 0.00011 U | 0.00011 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.0001 U | | | | |
| PEST/PCB | ENDOSULFAN I | MG/L | 0.000056 U | 0.000051 U | 0.000056 U | 0.000055 U | 0.000052 U | 0.000053 U | 0.000053 U | 0.000052 U | R | 0.00005 U | 0.000053 U | 0.000053 U | 0.000056 U | 0.000054 U | 0.000052 U | 0.000052 U | 0.00005 U | | | | |
| PEST/PCB | ENDOSULFAN II | MG/L | 0.00011 U | 0.0001 U | 0.00011 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.00011 U | 0.0001 U | R | 0.0001 U | 0.0001 U | 0.00011 U | 0.00011 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.0001 U | | | | |
| PEST/PCB | ENDOSULFAN SULFATE | MG/L | 0.00011 U | 0.0001 U | 0.00011 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.00011 U | 0.0001 U | R | 0.0001 U | 0.0001 U | 0.00011 U | 0.00011 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.0001 U | | | | |
| PEST/PCB | ENDRIN | MG/L | 0.00011 U | 0.0001 U | 0.00011 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.00011 U | 0.0001 U | R | 0.0001 U | 0.0001 U | 0.00011 U | 0.00011 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.0001 U | | | | |
| PEST/PCB | ENDRIN ALDEHYDE | MG/L | 0.00011 U | 0.0001 U | 0.00011 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.00011 U | 0.0001 U | R | 0.0001 U | 0.0001 U | 0.00011 U | 0.00011 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.0001 U | | | | |
| PEST/PCB | ENDRIN KETONE | MG/L | 0.00011 U | 0.0001 U | 0.00011 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.00011 U | 0.0001 U | R | 0.0001 U | 0.0001 U | 0.00011 U | 0.00011 U | 0.00011 U | 0.0001 U | 0.0001 U | 0.0001 U | | | | |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/L | 0.000056 U | 0.000051 U | 0.000056 U | 0.000055 U | 0.000052 U | 0.000053 U | 0.000053 U | 0.000052 U | R | 0.00005 U | 0.000053 U | 0.000053 U | 0.000056 U | 0.000054 U | 0.000052 U | 0.000052 U | 0.00005 U | | | | |
| PEST/PCB | GAMMA-CHLORDANE | MG/L | 0.000056 U | 0.000051 U | 0.000056 U | 0.000055 U | 0.000052 U | 0.000053 U | 0.000053 U | 0.000052 U | R | 0.00005 U | 0.000053 U | 0.000053 U | 0.000056 U | 0.000054 U | 0.000052 U | 0.000052 U | 0.00005 U | | | | |
| PEST/PCB | HEPTACHLOR | MG/L | 0.000056 U | 0.000051 U | 0.000056 U | 0.000055 U | 0.000052 U | 0.000053 U | 0.000053 U | 0.000052 U | R | 0.00005 U | 0.000053 U | 0.000053 U | 0.000056 U | 0.000054 U | 0.000052 U | 0.000052 U | 0.00005 U | | | | |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/L | 0.000056 U | 0.000051 U | 0.000056 U | 0.000055 U | 0.000052 U | 0.000053 U | 0.000053 U | 0.000052 U | R | 0.00005 U | 0.000053 U | 0.000053 U | 0.000056 U | 0.000054 U | 0.000052 U | 0.000052 U | 0.00005 U | | | | |
| PEST/PCB | METHOXYCHLOR | MG/L | 0.00056 U | 0.00051 U | 0.00056 U | 0.00055 U | 0.00052 U | 0.00053 U | 0.00053 U | 0.00052 U | R | 0.0005 U | 0.00053 U | 0.00053 U | 0.00056 U | 0.00054 U | 0.00052 U | 0.00052 U | 0.0005 U | | | | |
| PEST/PCB | TOXAPHENE | MG/L | 0.0056 U | 0.0051 U | 0.0056 U | 0.0055 U | 0.0052 U | 0.0053 U | 0.0053 U | 0.0052 U | R | 0.005 U | 0.0053 U | 0.0053 U | 0.0056 U | 0.0054 U | 0.0052 U | 0.0052 U | 0.005 U | | | | |
| SVOC | 1,1'-BIPHENYL | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | 1,2,4,5-TETRACHLOROBENZENE | MG/L | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | 2,3,4,6-TETRACHLOROPHENOL | MG/L | | | | | | | | | | | | | | | | | | | | | |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/L | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.026 U | 0.025 U | 0.026 U | 0.026 U | 0.026 U | 0.025 U | 0.025 U | 0.025 U | 0.026 U | 0.027 U | 0.025 U | 0.028 U | 0.025 U | | | | |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | 2,4-DICHLOROPHENOL | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | 2,4-DIMETHYLPHENOL | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | 2,4-DINITROPHENOL | MG/L | 0.025 UJ | 0.025 U | 0.025 UJ | 0.025 U | 0.026 U | 0.025 U | 0.026 U | 0.026 U | 0.026 U | 0.025 U | 0.025 U | 0.025 U | 0.026 U | 0.027 U | 0.025 U | 0.028 U | 0.025 U | | | | |
| SVOC | 2,4-DINITROTOLUENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | 2,6-DINITROTOLUENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | 2-CHLORONAPHTHALENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | 2-CHLOROPHENOL | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | 2-METHYLNAPHTHALENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | 2-METHYLPHENOL | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | 2-NITROANILINE | MG/L | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.026 U | 0.025 U | 0.026 U | 0.026 U | 0.026 U | 0.025 U | 0.025 U | 0.025 U | 0.026 U | 0.027 U | 0.025 U | 0.028 U | 0.025 U | | | | |
| SVOC | 2-NITROPHENOL | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | 3-NITROANILINE | MG/L | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.026 U | 0.025 U | 0.026 U | 0.026 U | 0.026 U | 0.025 U | 0.025 U | 0.025 U | 0.026 U | 0.027 U | 0.025 U | 0.028 U | 0.025 U | | | | |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/L | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.026 U | 0.025 U | 0.026 U | 0.026 U | 0.026 U | 0.025 U | 0.025 U | 0.025 U | 0.026 U | 0.027 U | 0.025 U | 0.028 U | 0.025 U | | | | |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | 4-CHLOROANILINE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | 4-METHYLPHENOL | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | 4-NITROANILINE | MG/L | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.026 U | 0.025 U | 0.026 U | 0.026 U | 0.026 U | 0.025 U | 0.025 U | 0.025 U | 0.026 U | 0.027 U | 0.025 U | 0.028 U | 0.025 U | | | | |
| SVOC | 4-NITROPHENOL | MG/L | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.026 U | 0.025 U | 0.026 U | 0.026 U | 0.026 U | 0.025 U | 0.025 U | 0.025 U | 0.026 U | 0.027 U | 0.025 U | 0.028 U | 0.025 U | | | | |
| SVOC | ACENAPHTHENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | ACENAPHTHYLENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | ACETOPHENONE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | ANTHRACENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | ATRAZINE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | BENZALDEHYDE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 UJ | 0.01 U | 0.011 U | 0.01 UJ | 0.011 U | 0.01 UJ | | | | |
| SVOC | BENZO(A)ANTHRACENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | BENZO(A)PYRENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | BENZO(B)FLUORANTHENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | BENZO(G,H,I)PERYLENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |

**Table 3 Surface Water Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | HC | KWL | KWL | KWL | KWL | KWL | KWL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | HCDW0012 | HCDW0012 | HCDW0013 | HCDW0013 | HCDW0014 | HCDW0014 | HCDW0015 | HCDW0015 | HCDW0016 | HCDW0016 | HCDW0017 | HCDW0017 | HCDW0017 | HCDW0018 | HCDW0018 | HCDW0019 | HCDW0019 | KWDW0002 | KWDW0003 | KWDW0004 | KWDW0005 |
| | | Field Sample ID | HCDW0012-SW-AA-R1-0 | HCDW0012-SW-AA-R2-0 | HCDW0013-SW-AA-R1-0 | HCDW0013-SW-AA-R2-0 | HCDW0014-SW-AA-R1-0 | HCDW0014-SW-AA-R2-0 | HCDW0015-SW-AA-R1-0 | HCDW0015-SW-AA-R2-0 | HCDW0016-SW-AA-R1-0 | HCDW0016-SW-AA-R2-0 | HCDW0017-SW-AA-R1-0 | HCDW0017-SW-AA-R2-0 | HCDW0017-SW-AA-R1-1 | HCDW0018-SW-AA-R1-0 | HCDW0018-SW-AA-R2-0 | HCDW0019-SW-AA-R1-0 | HCDW0019-SW-AA-R2-0 | KWDW0002-SW-AB-R1-0 | KWDW0003-SW-AE-R1-0 | KWDW0004-SW-AD-R1-0 | KWDW0005-SW-AD-R1-0 |
| | | Sample Date | 9/12/2005 | 10/19/2005 | 9/12/2005 | 10/19/2005 | 9/12/2005 | 10/19/2005 | 9/12/2005 | 10/19/2005 | 9/14/2005 | 10/19/2005 | 9/13/2005 | 10/18/2005 | 9/13/2005 | 9/13/2005 | 10/18/2005 | 9/13/2005 | 10/18/2005 | 10/31/2007 | 10/31/2007 | 10/31/2007 | 10/31/2007 |
| | | Depth (ft) | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0-0.5 | 0.5 | 2 | 1.5 | 1.5 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(K)FLUORANTHENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | BENZYL BUTYL PHTHALATE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | CAPROLACTAM | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | CARBAZOLE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | CHRYSENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | DIBENZOFURAN | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | DIETHYLPHTHALATE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | DIMETHYLPHTHALATE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | DI-N-BUTYLPHTHALATE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | DI-N-OCTYLPHTHALATE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | FLUORANTHENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | FLUORENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | HEXACHLOROBENZENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | HEXACHLOROBUTADIENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | HEXACHLOROETHANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | ISOPHORONE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | NAPHTHALENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | NITROBENZENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | N-NITROSODIPHENYLAMINE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | PENTACHLOROPHENOL | MG/L | 0.025 U | 0.025 U | 0.025 U | 0.025 U | 0.026 U | 0.025 U | 0.026 U | 0.026 U | 0.026 U | 0.025 U | 0.025 U | 0.025 U | 0.026 U | 0.027 U | 0.025 U | 0.028 U | 0.025 U | | | | |
| SVOC | PHENANTHRENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| SVOC | PHENOL | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | | | | |
| SVOC | PYRENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| VOC | 1,1,1-TRICHLOROETHANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | 1,1,2-TRICHLOROETHANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | 1,1-DICHLOROETHANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | 1,1-DICHLOROETHENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | 1,2,3-TRICHLOROBENZENE | MG/L | | | | | | | | | | | | | | | | | | | | | |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/L | 0.01 UJ | 0.01 UJ | 0.01 UJ | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | 1,2-DIBROMOETHANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | 1,2-DICHLOROBENZENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | 1,2-DICHLOROETHANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | 1,2-DICHLOROPROPANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | 1,3-DICHLOROBENZENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | 1,4-DICHLOROBENZENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | 2-HEXANONE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | 4-METHYL-2-PENTANONE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | ACETONE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 U | | | | |
| VOC | BENZENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | BROMOCHLOROMETHANE | MG/L | | | | | | | | | | | | | | | | | | | | | |
| VOC | BROMODICHLOROMETHANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | BROMOFORM | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | BROMOMETHANE | MG/L | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | CARBON DISULFIDE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | CARBON TETRACHLORIDE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | CHLOROBENZENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | CHLOROETHANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 U | | | | |
| VOC | CHLOROFORM | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | CHLOROMETHANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 U | | | | |
| VOC | CIS-1,2-DICHLOROETHENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | CYCLOHEXANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | DIBROMOCHLOROMETHANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | DICHLORODIFLUOROMETHANE | MG/L | 0.01 UJ | 0.01 UJ | 0.01 UJ | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | DICHLOROMETHANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | ETHYLBENZENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | ISOPROPYLBENZENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | METHYL ACETATE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | METHYL ETHYL KETONE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | METHYLCYCLOHEXANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | STYRENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | TETRACHLOROETHENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | TOLUENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/L | 0.01 UJ | 0.01 U | 0.01 UJ | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 UJ | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | TRICHLOROETHYLENE (TCE) | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | TRICHLOROFLUOROMETHANE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | VINYL CHLORIDE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | XYLENE, O- | MG/L | | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES (TOTAL) | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | | |
| VOC | XYLENES, M & P | MG/L | | | | | | | | | | | | | | | | | | | | | |

**Table 3 Surface Water Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | KWL | KWL | KWL | KWL | KWL | KWL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | KWDW0006 | KWDW0007 | KWDW0008 | KWDW0009 | KWDW0010 | KWDW0011 | SLDW0001 | SLDW0002 | SLDW0003 | SLDW0003 | SLDW0004 | SLDW0004 | SLDW0005 | SLDW0005 | SLDW0006 | SLDW0007 | SLDW0007 | SLDW0007 | SLDW0008 | SLDW0009 | SLDW0010 |
| | | Field Sample ID | KWDW0006-SW-AD-R1-0 | KWDW0007-SW-AD-R1-0 | KWDW0008-SW-AD-R1-0 | KWDW0009-SW-AD-R1-0 | KWDW0010-SW-AB-R1-0 | KWDW0011-SW-AB-R1-0 | SLDW0001-SW-AH-R1-0 | SLDW0002-SW-AH-R1-0 | SLDW0003-SW-AL-R2-0 | SLDW0003-SW-AO-R1-0 | SLDW0004-SW-AS-R1-0 | SLDW0004-SW-AS-R2-0 | SLDW0005-SW-AR-R1-0 | SLDW0005-SW-AR-R1-1 | SLDW0006-SW-AR-R1-0 | SLDW0007-SW-AL-R1-0 | SLDW0007-SW-AK-R2-0 | SLDW0007-SW-AK-R2-1 | SLDW0008-SW-AJ-R1-0 | SLDW0009-SW-AA-R1-0 | SLDW0010-SW-AM-R1-0 |
| | | Sample Date | 10/31/2007 | 10/31/2007 | 10/31/2007 | 10/31/2007 | 10/31/2007 | 10/31/2007 | 10/28/2009 | 10/27/2009 | 11/1/2012 | 10/27/2009 | 10/27/2009 | 11/1/2012 | 10/27/2009 | 10/27/2009 | 10/28/2009 | 10/28/2009 | 11/1/2012 | 11/1/2012 | 10/28/2009 | 4/27/2010 | 4/27/2010 |
| | | Depth (ft) | 1.5 | 1.5 | 1.5 | 1.5 | 0.5 | 0.5 | 3.5 | 4 | 5.5 | 7 | 9 | 9 | 8.5 | 8.5 | 8.5 | 5.5 | 5 | 5 | 4.5 | 0-0.5 | 6 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| METALS | ALUMINUM | MG/L | 0.187 J | 0.204 | 0.123 J | 0.117 J | 0.72 | 0.0752 J | 0.0688 J | 0.085 J | | 0.0857 J | 0.2 U | | 0.115 J | 0.0509 J | 0.0708 J | 0.115 J | | | 0.0781 J | 0.0978 J | 0.0939 J |
| METALS | ANTIMONY | MG/L | 0.0033 U | 0.0033 U | 0.0033 U | 0.0033 U | 0.0033 U | 0.0033 U | 0.06 U | 0.06 U | | 0.06 U | 0.06 U | | 0.06 U | 0.06 U | 0.06 U | 0.06 U | | | 0.06 U | 0.06 U | 0.06 U |
| METALS | ARSENIC | MG/L | 0.0091 J | 0.0066 J | 0.0087 J | 0.0098 J | 0.0194 | 0.0117 | 0.01 U | 0.01 U | | 0.01 U | 0.01 U | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | 0.0065 J | 0.01 U | 0.01 U |
| METALS | BARIUM | MG/L | 0.098 J | 0.104 J | 0.105 J | 0.108 J | 0.138 J | 0.114 J | 0.0554 J | 0.0566 J | | 0.0554 J | 0.0619 J | | 0.0548 J | 0.0601 J | 0.058 J | 0.0584 J | | | 0.244 | 0.0403 J | 0.0468 J |
| METALS | BERYLLIUM | MG/L | 0.0002 U | 0.0002 U | 0.0002 U | 0.0002 U | 0.0002 U | 0.0002 U | 0.001 U | 0.001 U | | 0.001 U | 0.001 U | | 0.001 U | 0.001 U | 0.001 U | 0.001 U | | | 0.001 U | 0.001 U | 0.001 U |
| METALS | CADMIUM | MG/L | 0.0004 U | 0.0004 U | 0.0004 U | 0.0004 U | 0.0004 U | 0.0004 U | 0.001 U | 0.001 U | | 0.001 U | 0.001 U | | 0.001 U | 0.001 U | 0.001 U | 0.001 U | | | 0.001 U | 0.001 U | 0.001 U |
| METALS | CALCIUM | MG/L | 15.2 | 15.3 | 16.6 | 17 | 17.2 | 18 | 18.8 | 18.3 | | 19.4 | 19.9 | | 19.3 | 20.6 | 20.4 | 20.1 | | | 34.4 | 18.6 | 19.4 |
| METALS | CHROMIUM | MG/L | 0.0023 U | 0.0023 U | 0.0023 U | 0.0023 U | 0.0094 J | 0.0023 U | 0.01 U | 0.01 U | | 0.01 U | 0.01 U | | 0.01 U | 0.01 U | 0.01 U | 0.01 U | | | 0.01 U | 0.0012 J | 0.01 U |
| METALS | COBALT | MG/L | 0.0023 U | 0.0023 U | 0.0023 U | 0.0023 U | 0.0023 U | 0.0023 U | 0.001 U | 0.001 U | | 0.001 U | 0.001 U | | 0.001 U | 0.001 U | 0.001 U | 0.001 U | | | 0.008 J | 0.001 U | 0.001 U |
| METALS | COPPER | MG/L | 0.0029 J | 0.0022 J | 0.0015 J | 0.0018 J | 0.0101 J | 0.0017 J | 0.005 U | 0.0013 J | | 0.0011 J | 0.00077 J | | 0.0013 J | 0.00079 J | 0.005 U | 0.005 U | | | 0.005 U | 0.005 U | 0.005 U |
| METALS | CYANIDE | MG/L | 0.0006 U | 0.0006 U | 0.0006 U | 0.0034 J | 0.0027 J | 0.0024 J | 0.01 U | 0.01 U | | 0.01 U | 0.01 U | | 0.01 U | 0.0014 J | 0.01 U | 0.01 U | | | 0.0053 J | 0.01 U | 0.01 U |
| METALS | IRON | MG/L | 1.13 | 1.17 | 1.14 | 1.2 | 2.65 | 1.2 | 0.805 | 1.13 | | 0.948 | 1.06 | | 1.11 | 0.943 | 1.3 | 1.48 | | | 29.6 | 1.69 | 1.87 |
| METALS | LEAD | MG/L | 0.0153 | 0.0187 | 0.0155 | 0.0156 | 0.0993 | 0.0146 | 0.001 U | 0.0019 | | 0.0016 | 0.00099 J | | 0.0028 J | 0.0011 J | 0.001 U | 0.0016 | | | 0.001 U | 0.001 U | 0.001 U |
| METALS | MAGNESIUM | MG/L | 2.84 J | 2.86 J | 3.05 J | 3.11 J | 3.16 J | 3.27 J | 3.22 J | 3.14 J | | 3.23 J | 3.35 J | | 3.3 J | 3.46 J | 3.35 J | 3.29 J | | | 6.26 | 3.36 J | 3.5 J |
| METALS | MANGANESE | MG/L | 0.0453 | 0.0464 | 0.0459 | 0.0538 | 0.0929 | 0.0492 | 0.133 | 0.136 | | 0.114 | 0.169 | | 0.124 | 0.126 | 0.166 | 0.117 | | | 2.51 | 0.148 | 0.173 |
| METALS | MERCURY | MG/L | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0001 U | 0.0002 U | 0.0002 U | | 0.0002 U | 0.0002 U | | 0.0002 U | 0.0002 U | 0.0002 U | 0.0002 U | | | 0.0002 U | 0.0002 U | 0.0002 U |
| METALS | NICKEL | MG/L | 0.0014 J | 0.0011 J | 0.0013 J | 0.0009 U | 0.0019 J | 0.0017 J | 0.04 U | 0.04 U | | 0.04 U | 0.04 U | | 0.04 U | 0.04 U | 0.04 U | 0.04 U | | | 0.04 U | 0.04 U | 0.04 U |
| METALS | POTASSIUM | MG/L | 3.03 J | 3.04 J | 3.08 J | 3.08 J | 2.96 J | 3.08 J | 3.17 J | 3.11 J | | 3.29 J | 3.29 J | | 3.3 J | 3.45 J | 3.61 J | 3.55 J | | | 5.32 | 2.7 J | 2.67 J |
| METALS | SELENIUM | MG/L | 0.0045 U | 0.0045 U | 0.0045 U | 0.0045 U | 0.0045 U | 0.0045 U | 0.005 UJ | 0.005 U | | 0.005 U | 0.005 U | | 0.005 U | 0.005 U | 0.005 UJ | 0.005 UJ | | | 0.005 UJ | 0.005 U | 0.005 U |
| METALS | SILVER | MG/L | 0.0009 U | 0.0009 U | 0.0009 U | 0.0009 U | 0.0009 U | 0.0009 U | 0.001 U | 0.001 U | | 0.001 U | 0.001 U | | 0.001 U | 0.001 U | 0.001 U | 0.001 U | | | 0.001 U | 0.001 U | 0.001 U |
| METALS | SODIUM | MG/L | 17.7 | 17.7 | 19.4 | 20 | 20.4 | 22.2 | 20.1 | 19.4 | | 20.5 | 21.2 | | 20.6 | 21.8 | 19 | 17.2 | | | 64.5 | 48.6 | 50.5 |
| METALS | THALLIUM | MG/L | 0.0051 UJ | 0.0051 UJ | 0.0051 UJ | 0.0051 UJ | 0.0051 UJ | 0.0051 UJ | 0.001 U | 0.001 U | | 0.001 U | 0.001 U | | 0.001 U | 0.001 U | 0.001 U | 0.001 U | | | 0.001 U | 0.001 U | 0.001 U |
| METALS | VANADIUM | MG/L | 0.0022 U | 0.0022 U | 0.0022 U | 0.0022 U | 0.0022 U | 0.0022 U | 0.005 U | 0.001 U | | 0.005 U | 0.005 U | | 0.005 U | 0.005 U | 0.005 U | 0.005 U | | | 0.005 U | 0.005 U | 0.005 U |
| METALS | ZINC | MG/L | 0.0042 J | 0.0062 J | 0.0038 J | 0.0047 J | 0.0523 | 0.0044 J | 0.06 U | 0.06 U | | 0.06 U | 0.06 U | | 0.06 U | 0.06 U | 0.06 U | 0.06 U | | | 0.06 U | R | 0.0018 J |
| PEST/PCB | 4,4'-DDD | MG/L | | | | | | | 0.0000095 U | 0.000011 U | | 0.000011 U | 0.0000095 U | | 0.0000095 U | 0.000011 U | 0.0000095 U | 0.0000095 U | | | 0.000011 U | 0.0000095 U | 0.0000097 U |
| PEST/PCB | 4,4'-DDE | MG/L | | | | | | | 0.0000095 U | 0.000011 U | | 0.000011 U | 0.0000095 U | | 0.0000095 U | 0.0000095 U | 0.00001 U | 0.0000095 U | | | 0.000011 U | 0.0000095 U | 0.0000097 U |
| PEST/PCB | 4,4'-DDT | MG/L | | | | | | | 0.0000095 U | 0.000011 U | | 0.000011 U | 0.0000095 U | | 0.0000095 U | 0.0000095 U | 0.00001 U | 0.0000095 U | | | 0.000011 U | 0.0000095 U | 0.0000097 U |
| PEST/PCB | ALDRIN | MG/L | | | | | | | 0.0000047 U | 0.0000055 U | | 0.0000053 U | 0.0000047 U | | 0.0000047 U | 0.0000048 U | 0.0000052 U | 0.0000047 U | | | 0.0000053 U | 0.0000048 U | 0.0000049 U |
| PEST/PCB | ALPHA-BHC | MG/L | | | | | | | 0.0000047 U | 0.0000055 U | | 0.0000053 U | 0.0000047 U | | 0.0000047 U | 0.0000048 U | 0.0000052 U | 0.0000047 U | | | 0.0000053 U | 0.0000048 U | 0.0000049 U |
| PEST/PCB | ALPHA-CHLORDANE | MG/L | | | | | | | 0.0000047 U | 0.0000055 U | | 0.0000053 U | 0.0000047 U | | 0.0000047 U | 0.0000048 U | 0.0000052 U | 0.0000047 U | | | 0.0000053 U | 0.0000048 U | 0.0000049 U |
| PEST/PCB | AROCLOR-1016 | MG/L | 0.0005 U | 0.0005 U | 0.00053 U | 0.0005 U | 0.00053 U | 0.0005 U | 0.000095 U | 0.00011 U | | 0.00011 U | 0.00011 U | | 0.000095 U | 0.000095 U | 0.00011 U | 0.000095 U | | | 0.0001 U | 0.000097 U | 0.000095 U |
| PEST/PCB | AROCLOR-1221 | MG/L | 0.0005 U | 0.0005 U | 0.00053 U | 0.0005 U | 0.00053 U | 0.0005 U | 0.000095 U | 0.00011 U | | 0.00011 U | 0.00011 U | | 0.000095 U | 0.000095 U | 0.00011 U | 0.000095 U | | | 0.0001 U | 0.000097 U | 0.000095 U |
| PEST/PCB | AROCLOR-1232 | MG/L | 0.0005 U | 0.0005 U | 0.00053 U | 0.0005 U | 0.00053 U | 0.0005 U | 0.000095 U | 0.00011 U | | 0.00011 U | 0.00011 U | | 0.000095 U | 0.000095 U | 0.00011 U | 0.000095 U | | | 0.0001 U | 0.000097 U | 0.000095 U |
| PEST/PCB | AROCLOR-1242 | MG/L | 0.0005 U | 0.0005 U | 0.00053 U | 0.0005 U | 0.00053 U | 0.0005 U | 0.000095 U | 0.00011 U | | 0.00011 U | 0.00011 U | | 0.000095 U | 0.000095 U | 0.00011 U | 0.000095 U | | | 0.0001 U | 0.000097 U | 0.000095 U |
| PEST/PCB | AROCLOR-1248 | MG/L | 0.0005 U | 0.0005 U | 0.00053 U | 0.0005 U | 0.00053 U | 0.0005 U | 0.000095 U | 0.00011 U | | 0.00011 U | 0.00011 U | | 0.000095 U | 0.000095 U | 0.00011 U | 0.000095 U | | | 0.0001 U | 0.000097 U | 0.000095 U |
| PEST/PCB | AROCLOR-1254 | MG/L | 0.0005 U | 0.0005 U | 0.00053 U | 0.0005 U | 0.00053 U | 0.0005 U | 0.000095 U | 0.00011 U | | 0.00011 U | 0.00011 U | | 0.000095 U | 0.000095 U | 0.00011 U | 0.000095 U | | | 0.0001 U | 0.000097 U | 0.000095 U |
| PEST/PCB | AROCLOR-1260 | MG/L | 0.0005 U | 0.0005 U | 0.00053 U | 0.0005 U | 0.00053 U | 0.0005 U | 0.000095 U | 0.00011 U | | 0.00011 U | 0.00011 U | | 0.000095 U | 0.000095 U | 0.00011 U | 0.000095 U | | | 0.0001 U | 0.000097 U | 0.000095 U |
| PEST/PCB | AROCLOR-1262 | MG/L | | | | | | | 0.000095 U | 0.00011 U | | 0.00011 U | 0.00011 U | | 0.000095 U | 0.000095 U | 0.00011 U | 0.000095 U | | | 0.0001 U | 0.000097 U | 0.000095 U |
| PEST/PCB | AROCLOR-1268 | MG/L | | | | | | | 0.000095 U | 0.00011 U | | 0.00011 U | 0.00011 U | | 0.000095 U | 0.000095 U | 0.00011 U | 0.000095 U | | | 0.0001 U | 0.000097 U | 0.000095 U |
| PEST/PCB | BETA-BHC | MG/L | | | | | | | 0.0000047 U | 0.0000055 U | | 0.0000053 U | 0.0000047 U | | 0.0000047 U | 0.0000048 U | 0.0000052 U | 0.0000047 U | | | R | 0.0000048 U | 0.0000049 U |
| PEST/PCB | DELTA-BHC | MG/L | | | | | | | 0.0000047 U | 0.0000055 U | | 0.0000053 U | 0.0000047 U | | 0.0000047 U | 0.0000048 U | 0.0000052 U | 0.0000047 U | | | 0.0000053 U | 0.0000048 U | 0.0000049 U |
| PEST/PCB | DIELDRIN | MG/L | | | | | | | 0.0000095 U | 0.000011 U | | 0.000011 U | 0.0000095 U | | 0.0000095 U | 0.0000095 U | 0.00001 U | 0.0000095 U | | | 0.000011 U | 0.0000095 U | 0.0000097 U |
| PEST/PCB | ENDOSULFAN I | MG/L | | | | | | | 0.0000047 U | 0.0000055 U | | 0.0000053 U | 0.0000047 U | | 0.0000047 U | 0.0000048 U | 0.0000052 U | 0.0000047 U | | | 0.0000053 U | 0.0000048 U | 0.0000049 U |
| PEST/PCB | ENDOSULFAN II | MG/L | | | | | | | 0.0000095 U | 0.000011 U | | 0.000011 U | 0.0000095 U | | 0.0000095 U | 0.0000095 U | 0.00001 U | 0.0000095 U | | | 0.000011 U | 0.0000095 U | 0.0000097 U |
| PEST/PCB | ENDOSULFAN SULFATE | MG/L | | | | | | | 0.0000095 U | 0.000011 U | | 0.000011 U | 0.0000095 U | | 0.0000095 U | 0.0000095 U | 0.00001 U | 0.0000095 U | | | 0.000011 U | 0.0000095 U | 0.0000097 U |
| PEST/PCB | ENDRIN | MG/L | | | | | | | 0.0000095 U | 0.000011 U | | 0.000011 U | 0.0000095 U | | 0.0000095 U | 0.0000095 U | 0.00001 U | 0.0000095 U | | | 0.000011 U | 0.0000095 U | 0.0000097 U |
| PEST/PCB | ENDRIN ALDEHYDE | MG/L | | | | | | | 0.0000095 U | 0.000011 U | | 0.000011 U | 0.0000095 U | | 0.0000095 U | 0.0000095 U | 0.00001 U | 0.0000095 U | | | 0.000011 U | 0.0000095 U | 0.0000097 U |
| PEST/PCB | ENDRIN KETONE | MG/L | | | | | | | 0.0000095 U | 0.000011 U | | 0.000011 U | 0.0000095 U | | 0.0000095 U | 0.0000095 U | 0.00001 U | 0.0000095 U | | | 0.000011 U | 0.0000095 U | 0.0000097 U |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/L | | | | | | | 0.0000047 U | 0.0000055 U | | 0.0000053 U | 0.0000047 U | | 0.0000047 U | 0.0000048 U | 0.0000052 U | 0.0000047 U | | | R | 0.0000048 U | 0.0000049 U |
| PEST/PCB | GAMMA-CHLORDANE | MG/L | | | | | | | 0.0000047 U | 0.0000055 U | | 0.0000053 U | 0.0000047 U | | 0.0000047 U | 0.0000048 U | 0.0000052 U | 0.0000047 U | | | 0.0000053 U | 0.0000048 U | 0.0000049 U |
| PEST/PCB | HEPTACHLOR | MG/L | | | | | | | 0.0000047 U | 0.0000055 U | | 0.0000053 U | 0.0000047 U | | 0.0000047 U | 0.0000048 U | 0.0000052 U | 0.0000047 U | | | R | 0.0000048 U | 0.0000049 U |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/L | | | | | | | 0.0000047 U | 0.0000055 U | | 0.0000053 U | 0.0000047 U | | 0.0000047 U | 0.0000048 U | 0.0000052 U | 0.0000047 U | | | 0.0000053 U | 0.0000048 U | 0.0000049 U |
| PEST/PCB | METHOXYCHLOR | MG/L | | | | | | | 0.000047 U | 0.000055 U | | 0.000053 U | 0.000047 U | | 0.000047 U | 0.000048 U | 0.000052 U | 0.000047 U | | | 0.000053 U | 0.000048 U | 0.000049 U |
| PEST/PCB | TOXAPHENE | MG/L | | | | | | | 0.00047 U | 0.00055 U | | 0.00053 U | 0.00047 U | | 0.00047 U | 0.00048 U | 0.00052 U | 0.00047 U | | | 0.00053 U | 0.00048 U | 0.00049 U |
| SVOC | 1,1'-BIPHENYL | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | 1,2,4,5-TETRACHLOROBENZENE | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | 2,3,4,6-TETRACHLOROPHENOL | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | 2,4-DICHLOROPHENOL | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | 2,4-DIMETHYLPHENOL | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | 2,4-DINITROPHENOL | MG/L | | | | | | | 0.0095 U | 0.011 U | 0.01 U | 0.011 U | 0.011 U | 0.011 U | 0.0095 U | 0.0094 U | 0.011 U | 0.0095 U | 0.011 U | 0.01 U | 0.011 U | 0.0095 U | 0.0095 U |
| SVOC | 2,4-DINITROTOLUENE | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | 2,6-DINITROTOLUENE | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | 2-CHLORONAPHTHALENE | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | 2-CHLOROPHENOL | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | 2-METHYLNAPHTHALENE | MG/L | | | | | | | 0.000095 U | 0.00011 U | 0.0052 U | 0.00011 U | 0.00011 U | 0.0053 U | 0.000095 U | 0.000094 U | 0.00011 U | 0.000095 U | 0.0053 U | 0.0051 U | 0.00011 U | 0.000095 U | 0.000095 U |
| SVOC | 2-METHYLPHENOL | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | 2-NITROANILINE | MG/L | | | | | | | 0.0095 U | 0.011 U | 0.01 U | 0.011 U | 0.011 U | 0.011 U | 0.0095 U | 0.0094 U | 0.011 U | 0.0095 U | 0.011 U | 0.01 U | 0.011 U | 0.0095 U | 0.0095 U |
| SVOC | 2-NITROPHENOL | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | 3-NITROANILINE | MG/L | | | | | | | 0.0095 U | 0.011 U | 0.01 U | 0.011 U | 0.011 U | 0.011 U | 0.0095 U | 0.0094 U | 0.011 U | 0.0095 U | 0.011 U | 0.01 U | 0.011 U | 0.0095 U | 0.0095 U |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/L | | | | | | | 0.0095 U | 0.011 U | 0.01 U | 0.011 U | 0.011 U | 0.011 U | 0.0095 U | 0.0094 U | 0.011 U | 0.0095 U | 0.011 U | 0.01 U | 0.011 U | 0.0095 U | 0.0095 U |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | 4-CHLOROANILINE | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | 4-METHYLPHENOL | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0036 J | 0.0047 U | 0.0048 U |
| SVOC | 4-NITROANILINE | MG/L | | | | | | | 0.0095 U | 0.011 U | 0.01 U | 0.011 U | 0.011 U | 0.011 U | 0.0095 U | 0.0094 U | 0.011 U | 0.0095 U | 0.011 U | 0.01 U | 0.011 U | 0.0095 U | 0.0095 U |
| SVOC | 4-NITROPHENOL | MG/L | | | | | | | 0.0095 U | 0.011 U | 0.01 U | 0.011 U | 0.011 U | 0.011 U | 0.0095 U | 0.0094 U | 0.011 U | 0.0095 U | 0.011 U | 0.01 U | 0.011 U | 0.0095 U | 0.0095 U |
| SVOC | ACENAPHTHENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.000095 U | 0.00011 U | 0.0052 U | 0.00011 U | 0.00011 U | 0.0053 U | 0.000095 U | 0.000094 U | 0.00011 U | 0.000095 U | 0.0053 U | 0.0051 U | 0.00011 U | 0.000095 U | 0.000095 U |
| SVOC | ACENAPHTHYLENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.000095 U | 0.00011 U | 0.0052 U | 0.00011 U | 0.00011 U | 0.0053 U | 0.000095 U | 0.000094 U | 0.00011 U | 0.000095 U | 0.0053 U | 0.0051 U | 0.00011 U | 0.000095 U | 0.000095 U |
| SVOC | ACETOPHENONE | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | ANTHRACENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.000095 U | 0.00011 U | 0.0000048 J | 0.00011 U | 0.00011 U | 0.0000043 J | 0.000095 U | 0.000094 U | 0.00011 U | 0.000095 U | 0.00011 U | 0.0000091 J | 0.00011 U | 0.000095 U | 0.000095 U |
| SVOC | ATRAZINE | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | BENZALDEHYDE | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | BENZO(A)ANTHRACENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.000095 U | 0.00013 | 0.000019 J | 0.00005 J | 0.00011 U | 0.000018 J | 0.000095 U | 0.000094 U | 0.00011 U | 0.000095 U | 0.0000058 J | 0.0000097 J | 0.00011 U | 0.000095 U | 0.000095 U |
| SVOC | BENZO(A)PYRENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.00016 | 0.00039 | 0.000043 J | 0.00028 | 0.00022 | 0.00004 J | 0.00018 U | 0.00017 U | 0.00021 | 0.00019 | 0.00011 U | 0.000016 J | 0.00019 | 0.00016 U | 0.00017 U |
| SVOC | BENZO(B)FLUORANTHENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.000095 U | 0.00028 | 0.0052 U | 0.00011 | 0.000023 J | 0.0053 U | 0.000095 U | 0.000094 U | 0.000027 J | 0.000095 U | 0.0053 U | 0.0051 U | 0.00011 U | 0.000095 U | 0.000095 U |
| SVOC | BENZO(G,H,I)PERYLENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.000095 U | 0.00019 | 0.0052 U | 0.000074 J | 0.00011 U | 0.0053 U | 0.000095 U | 0.000094 U | 0.00011 U | 0.000095 U | 0.0053 U | 0.0051 U | 0.00011 U | 0.000095 U | 0.000095 U |

**Table 3 Surface Water Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | KWL | KWL | KWL | KWL | KWL | KWL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL | SL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | KWDW0006 | KWDW0007 | KWDW0008 | KWDW0009 | KWDW0010 | KWDW0011 | SLDW0001 | SLDW0002 | SLDW0003 | SLDW0003 | SLDW0004 | SLDW0004 | SLDW0005 | SLDW0005 | SLDW0006 | SLDW0007 | SLDW0007 | SLDW0007 | SLDW0008 | SLDW0009 | SLDW0010 |
| | | Field Sample ID | KWDW0006-SW-AD-R1-0 | KWDW0007-SW-AD-R1-0 | KWDW0008-SW-AD-R1-0 | KWDW0009-SW-AD-R1-0 | KWDW0010-SW-AB-R1-0 | KWDW0011-SW-AB-R1-0 | SLDW0001-SW-AH-R1-0 | SLDW0002-SW-AH-R1-0 | SLDW0003-SW-AL-R2-0 | SLDW0003-SW-AO-R1-0 | SLDW0004-SW-AS-R1-0 | SLDW0004-SW-AS-R2-0 | SLDW0005-SW-AR-R1-0 | SLDW0005-SW-AR-R1-1 | SLDW0006-SW-AR-R1-0 | SLDW0007-SW-AL-R1-0 | SLDW0007-SW-AK-R2-0 | SLDW0007-SW-AK-R2-1 | SLDW0008-SW-AJ-R1-0 | SLDW0009-SW-AA-R1-0 | SLDW0010-SW-AM-R1-0 |
| | | Sample Date | 10/31/2007 | 10/31/2007 | 10/31/2007 | 10/31/2007 | 10/31/2007 | 10/31/2007 | 10/28/2009 | 10/27/2009 | 11/1/2012 | 10/27/2009 | 10/27/2009 | 11/1/2012 | 10/27/2009 | 10/27/2009 | 10/28/2009 | 10/28/2009 | 11/1/2012 | 11/1/2012 | 10/28/2009 | 4/27/2010 | 4/27/2010 |
| | | Depth (ft) | 1.5 | 1.5 | 1.5 | 1.5 | 0.5 | 0.5 | 3.5 | 4 | 5.5 | 7 | 9 | 9 | 8.5 | 8.5 | 8.5 | 5.5 | 5 | 5 | 4.5 | 0-0.5 | 6 |
| | | Units | | | | | | | | | | | | | | | | | | | | | |
| SVOC | BENZO(K)FLUORANTHENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.000095 U | 0.00022 | 0.0052 U | 0.000071 J | 0.00011 U | 0.0053 U | 0.000095 U | 0.000094 U | 0.00011 U | 0.000095 U | 0.0053 U | 0.0051 U | 0.00011 U | 0.000095 UJ | 0.000095 UJ |
| SVOC | BENZYL BUTYL PHTHALATE | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.00077 J | 0.0054 U | 0.0056 U | 0.00067 J | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.00092 J | 0.00043 J | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/L | | | | | | | 0.00099 J | 0.0053 U | 0.00086 J | 0.0054 U | 0.0056 U | 0.00064 J | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.00095 J | 0.00057 J | 0.0058 | 0.0047 U | 0.0048 U |
| SVOC | CAPROLACTAM | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.002 J | 0.0053 U | 0.0014 J | 0.0015 J | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | CARBAZOLE | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | CHRYSENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.000095 U | 0.00023 | 0.0052 U | 0.000085 J | 0.00011 U | 0.0053 U | 0.000095 U | 0.000094 U | 0.000024 J | 0.000095 U | 0.0053 U | 0.0051 U | 0.00011 U | 0.000095 U | 0.000095 U |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.000095 U | 0.000057 J | 0.0052 U | 0.000031 J | 0.00011 U | 0.0053 U | 0.000095 U | 0.000094 U | 0.00011 U | 0.000095 U | 0.0053 U | 0.0051 U | 0.00011 U | 0.000095 U | 0.000095 U |
| SVOC | DIBENZOFURAN | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | DIETHYLPHTHALATE | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | DIMETHYLPHTHALATE | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | DI-N-BUTYLPHTHALATE | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0004 J | 0.0054 U | 0.0056 U | 0.00034 J | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.00041 J | 0.00021 J | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | DI-N-OCTYLPHTHALATE | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | FLUORANTHENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.000059 J | 0.00063 | 0.000096 J | 0.00021 | 0.000081 J | 0.000089 J | 0.000048 J | 0.000049 J | 0.000072 J | 0.000043 J | 0.000042 J | 0.000039 J | 0.000068 J | 0.000038 J | 0.000046 J |
| SVOC | FLUORENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.000095 U | 0.00011 U | 0.0052 U | 0.00011 U | 0.00011 U | 0.0053 U | 0.000095 U | 0.000094 U | 0.00011 U | 0.000095 U | 0.0053 U | 0.0051 U | 0.00011 U | 0.000095 U | 0.000095 U |
| SVOC | HEXACHLOROBENZENE | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | HEXACHLOROBUTADIENE | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | HEXACHLOROETHANE | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.000095 U | 0.00019 | 0.000028 J | 0.000073 J | 0.00011 U | 0.000025 J | 0.000095 U | 0.000094 U | 0.00011 U | 0.000095 U | 0.000007 J | 0.000011 J | 0.00011 U | 0.000095 U | 0.000095 U |
| SVOC | ISOPHORONE | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | NAPHTHALENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.000095 U | 0.00011 U | 0.0052 U | 0.00011 U | 0.00011 U | 0.0053 U | 0.000095 U | 0.000094 U | 0.00011 U | 0.000095 U | 0.0053 U | 0.0051 U | 0.00011 U | 0.000095 U | 0.000095 U |
| SVOC | NITROBENZENE | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | N-NITROSODIPHENYLAMINE | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.0053 U | 0.0047 U | 0.0048 U |
| SVOC | PENTACHLOROPHENOL | MG/L | | | | | | | 0.00019 UJ | 0.00021 U | 0.01 U | 0.00022 U | 0.00022 U | 0.011 U | 0.00019 U | 0.00019 U | 0.00021 UJ | 0.00019 UJ | 0.011 U | 0.01 U | 0.00021 UJ | 0.00019 UJ | 0.00019 UJ |
| SVOC | PHENANTHRENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.000041 J | 0.00018 | 0.000041 J | 0.000073 J | 0.000042 J | 0.000037 J | 0.000036 J | 0.000031 J | 0.000053 J | 0.000037 J | 0.000021 J | 0.000017 J | 0.000055 J | 0.000027 J | 0.000029 J |
| SVOC | PHENOL | MG/L | | | | | | | 0.0048 U | 0.0053 U | 0.0052 U | 0.0054 U | 0.0056 U | 0.0053 U | 0.0048 U | 0.0047 U | 0.0053 U | 0.0048 U | 0.0053 U | 0.0051 U | 0.002 J | 0.0047 U | 0.0048 U |
| SVOC | PYRENE | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.000095 U | 0.00041 | 0.000072 J | 0.00017 | 0.00011 U | 0.00006 J | 0.000095 U | 0.000094 U | 0.00011 U | 0.000095 U | 0.000022 J | 0.000034 J | 0.00011 U | 0.000095 U | 0.000095 U |
| VOC | 1,1,1-TRICHLOROETHANE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | 1,1,2-TRICHLOROETHANE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | 1,1-DICHLOROETHANE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | 1,1-DICHLOROETHENE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | 1,2,3-TRICHLOROBENZENE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | 1,2-DIBROMOETHANE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | 1,2-DICHLOROBENZENE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | 1,2-DICHLOROETHANE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | 1,2-DICHLOROPROPANE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | 1,3-DICHLOROBENZENE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | 1,4-DICHLOROBENZENE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | 2-HEXANONE | MG/L | | | | | | | 0.005 U | 0.005 U | | 0.005 U | 0.005 U | | 0.005 U | 0.005 U | 0.005 U | 0.005 U | | | 0.005 U | 0.005 U | 0.005 U |
| VOC | 4-METHYL-2-PENTANONE | MG/L | | | | | | | 0.005 U | 0.005 U | | 0.005 U | 0.005 U | | 0.005 U | 0.005 U | 0.005 U | 0.005 U | | | 0.005 U | 0.005 U | 0.005 U |
| VOC | ACETONE | MG/L | | | | | | | 0.0029 J | 0.0025 J | | 0.0021 J | 0.0011 J | | 0.0024 J | 0.0012 J | 0.0023 J | 0.0033 J | | | 0.0028 J | 0.005 U | 0.005 U |
| VOC | BENZENE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | BROMOCHLOROMETHANE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | BROMODICHLOROMETHANE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | BROMOFORM | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | BROMOMETHANE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | CARBON DISULFIDE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | CARBON TETRACHLORIDE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | CHLOROBENZENE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | CHLOROETHANE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | CHLOROFORM | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | CHLOROMETHANE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | CIS-1,2-DICHLOROETHENE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | CYCLOHEXANE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | DIBROMOCHLOROMETHANE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | DICHLORODIFLUOROMETHANE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | DICHLOROMETHANE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | ETHYLBENZENE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | ISOPROPYLBENZENE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | METHYL ACETATE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.00034 J | 0.0005 U | 0.0005 U |
| VOC | METHYL ETHYL KETONE | MG/L | | | | | | | 0.005 U | 0.005 U | | 0.005 U | 0.005 U | | 0.005 U | 0.005 U | 0.005 U | 0.005 U | | | 0.00091 J | 0.005 U | 0.005 U |
| VOC | METHYLCYCLOHEXANE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/L | | | | | | | 0.00068 | 0.001 | | 0.00085 | 0.0008 | | 0.00083 | 0.00083 | 0.0017 | 0.00065 | | | 0.00035 J | 0.00056 | 0.00092 |
| VOC | STYRENE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | TETRACHLOROETHENE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | TOLUENE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.00082 | 0.0005 U | 0.0005 U |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | TRICHLOROETHYLENE (TCE) | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | TRICHLOROFLUOROMETHANE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | VINYL CHLORIDE | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | XYLENE, O- | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | | | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | XYLENES (TOTAL) | MG/L | | | | | | | | | | | | | | | | | | | | | |
| VOC | XYLENES, M & P | MG/L | | | | | | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | | 0.0005 U | 0.0005 U | 0.00024 J | 0.00021 J | | | 0.00023 J | 0.0005 U | 0.0005 U |

**Table 3 Surface Water Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | SL | SL | SL | SL | SL | SL | SL |
|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | SLDW0010 | SLDW0011 | SLDW0012 | SLDW0013 | SLDW0014 | SLDW0015 | SLDW0016 |
| | | Field Sample ID | SLDW0010-SW-AM-R1-1 | SLDW0011-SW-AB-R1-0 | SLDW0012-SW-AA-R1-0 | SLDW0013-SW-AB-R1-0 | SLDW0014-SW-AG-R1-0 | SLDW0015-SW-AA-R1-0 | SLDW0016-SW-AA-R1-0 |
| | | Sample Date | 4/27/2010 | 4/27/2010 | 4/27/2010 | 4/27/2010 | 4/28/2010 | 4/28/2010 | 4/28/2010 |
| | | Depth (ft) | 6 | 0.5 | 0-0.5 | 0.5 | 3 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | |
| METALS | ALUMINUM | MG/L | 0.13 J | 0.172 J | 0.419 | 0.113 J | 0.103 J | 0.539 | 0.252 |
| METALS | ANTIMONY | MG/L | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U |
| METALS | ARSENIC | MG/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.0128 |
| METALS | BARIUM | MG/L | 0.0498 J | 0.0772 J | 0.0556 J | 0.0548 J | 0.2 U | 0.2 U | 0.2 U |
| METALS | BERYLLIUM | MG/L | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U |
| METALS | CADMIUM | MG/L | 0.001 U | 0.001 U | 0.00011 J | 0.001 U | 0.001 U | 0.00012 J | 0.001 U |
| METALS | CALCIUM | MG/L | 19.4 | 17.4 | 31.2 | 20 | 21.2 | 35 | 25.4 |
| METALS | CHROMIUM | MG/L | 0.01 U | 0.01 U | 0.001 J | 0.01 U | 0.01 U | 0.0025 J | 0.0026 J |
| METALS | COBALT | MG/L | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.0009 J | 0.00058 J | 0.0011 |
| METALS | COPPER | MG/L | 0.005 U | 0.005 U | 0.0045 J | 0.005 U | 0.005 U | 0.005 U | 0.005 U |
| METALS | CYANIDE | MG/L | 0.01 U | 0.01 U | 0.0021 J | 0.01 U | 0.01 U | 0.0023 J | 0.0041 J |
| METALS | IRON | MG/L | 1.88 | 1.65 | 0.71 | 2.09 | 3.78 | 0.894 | 7.21 |
| METALS | LEAD | MG/L | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.00055 J | 0.0012 | 0.0028 |
| METALS | MAGNESIUM | MG/L | 3.5 J | 3.21 J | 6.55 | 3.64 J | 3.65 J | 7.41 | 6.42 |
| METALS | MANGANESE | MG/L | 0.172 | 0.138 | 0.0388 | 0.128 | 0.235 | 0.0395 | 0.417 |
| METALS | MERCURY | MG/L | 0.0002 U | 0.0002 U | 0.0002 U | 0.0002 U | 0.0002 U | 0.0002 U | 0.0002 U |
| METALS | NICKEL | MG/L | 0.04 U | 0.04 U | 0.04 U | 0.04 U | 0.04 U | 0.04 U | 0.0021 J |
| METALS | POTASSIUM | MG/L | 2.75 J | 2.48 J | 3.58 J | 2.95 J | 2.15 J | 4.87 J | 1.96 J |
| METALS | SELENIUM | MG/L | 0.005 U | 0.005 U | 0.005 U | 0.005 U | 0.005 U | 0.005 U | 0.005 U |
| METALS | SILVER | MG/L | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U |
| METALS | SODIUM | MG/L | 50.5 | 55.3 | 102 | 64.6 | 30.3 | 82.1 | 29.5 |
| METALS | THALLIUM | MG/L | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U | 0.001 U |
| METALS | VANADIUM | MG/L | 0.005 U | 0.005 U | 0.005 U | 0.005 U | 0.005 U | 0.005 U | 0.005 U |
| METALS | ZINC | MG/L | 0.0018 J | 0.0101 J | 0.0192 J | 0.0038 J | 0.0033 J | 0.0213 J | 0.0113 J |
| PEST/PCB | 4,4'-DDD | MG/L | 0.0000095 U | 0.0000096 U | 0.0000094 U | 0.0000095 U | 0.0000095 U | 0.0000095 U | 0.0000096 U |
| PEST/PCB | 4,4'-DDE | MG/L | 0.0000095 U | 0.0000096 U | 0.0000094 U | 0.0000095 U | 0.0000095 U | 0.0000095 U | 0.0000096 U |
| PEST/PCB | 4,4'-DDT | MG/L | 0.0000095 U | 0.0000096 U | 0.0000094 U | 0.0000095 U | 0.0000095 U | 0.0000095 U | 0.0000096 U |
| PEST/PCB | ALDRIN | MG/L | 0.0000048 U | 0.0000048 U | 0.0000047 U | 0.0000048 U | 0.0000048 U | 0.0000047 U | 0.0000048 U |
| PEST/PCB | ALPHA-BHC | MG/L | 0.0000048 U | 0.0000048 U | 0.0000047 U | 0.0000048 U | 0.0000048 U | 0.0000047 U | R |
| PEST/PCB | ALPHA-CHLORDANE | MG/L | 0.0000048 U | 0.0000048 U | 0.0000047 U | 0.0000048 U | 0.0000048 U | 0.0000047 U | 0.0000048 U |
| PEST/PCB | AROCLOR-1016 | MG/L | 0.000096 U | 0.000095 U | 0.000094 U | 0.000095 U | 0.000095 U | 0.000095 U | 0.000097 U |
| PEST/PCB | AROCLOR-1221 | MG/L | 0.000096 U | 0.000095 U | 0.000094 U | 0.000095 U | 0.000095 U | 0.000095 U | 0.000097 U |
| PEST/PCB | AROCLOR-1232 | MG/L | 0.000096 U | 0.000095 U | 0.000094 U | 0.000095 U | 0.000095 U | 0.000095 U | 0.000097 U |
| PEST/PCB | AROCLOR-1242 | MG/L | 0.000096 U | 0.000095 U | 0.000094 U | 0.000095 U | 0.000095 U | 0.000095 U | 0.000097 U |
| PEST/PCB | AROCLOR-1248 | MG/L | 0.000096 U | 0.000095 U | 0.000094 U | 0.000095 U | 0.000095 U | 0.000095 U | 0.000097 U |
| PEST/PCB | AROCLOR-1254 | MG/L | 0.000096 U | 0.000095 U | 0.000094 U | 0.000095 U | 0.000095 U | 0.000095 U | 0.000097 U |
| PEST/PCB | AROCLOR-1260 | MG/L | 0.000096 U | 0.000095 U | 0.000094 U | 0.000095 U | 0.000095 U | 0.000095 U | 0.000097 U |
| PEST/PCB | AROCLOR-1262 | MG/L | 0.000096 U | 0.000095 U | 0.000094 U | 0.000095 U | 0.000095 U | 0.000095 U | 0.000097 U |
| PEST/PCB | AROCLOR-1268 | MG/L | 0.000096 U | 0.000095 U | 0.000094 U | 0.000095 U | 0.000095 U | 0.000095 U | 0.000097 U |
| PEST/PCB | BETA-BHC | MG/L | 0.0000048 U | 0.0000048 U | R | 0.0000048 U | 0.0000048 U | 0.0000047 U | 0.0000048 U |
| PEST/PCB | DELTA-BHC | MG/L | 0.0000048 U | 0.0000048 U | 0.0000047 U | 0.0000048 U | 0.0000048 U | 0.0000047 U | 0.0000048 U |
| PEST/PCB | DIELDRIN | MG/L | 0.0000095 U | 0.0000096 U | 0.0000094 U | 0.0000095 U | 0.0000095 U | 0.0000052 J | 0.0000096 U |
| PEST/PCB | ENDOSULFAN I | MG/L | 0.0000048 U | 0.0000048 U | 0.0000047 U | 0.0000048 U | 0.0000048 U | 0.0000047 U | 0.0000048 U |
| PEST/PCB | ENDOSULFAN II | MG/L | 0.0000095 U | 0.0000096 U | 0.0000094 U | 0.0000095 U | 0.0000095 U | 0.0000095 U | 0.0000096 U |
| PEST/PCB | ENDOSULFAN SULFATE | MG/L | 0.0000095 U | 0.0000096 U | 0.0000094 U | 0.0000095 U | 0.0000095 U | 0.0000095 U | 0.0000096 U |
| PEST/PCB | ENDRIN | MG/L | 0.0000095 U | 0.0000096 U | 0.0000094 U | 0.0000095 U | 0.0000095 U | 0.0000095 U | 0.0000096 U |
| PEST/PCB | ENDRIN ALDEHYDE | MG/L | 0.0000095 U | 0.0000096 U | 0.0000094 U | 0.0000095 U | 0.0000095 U | 0.0000095 U | 0.0000096 U |
| PEST/PCB | ENDRIN KETONE | MG/L | 0.0000095 U | 0.0000096 U | 0.0000094 U | 0.0000095 U | 0.0000095 U | 0.0000095 U | 0.0000096 U |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/L | 0.0000048 U | 0.0000048 U | 0.0000047 U | 0.0000048 U | 0.0000048 U | 0.0000047 U | 0.0000048 U |
| PEST/PCB | GAMMA-CHLORDANE | MG/L | 0.0000048 U | 0.0000048 U | 0.0000047 U | 0.0000048 U | 0.0000048 U | 0.0000047 U | 0.0000048 U |
| PEST/PCB | HEPTACHLOR | MG/L | 0.0000048 U | 0.0000048 U | 0.0000047 U | 0.0000048 U | 0.0000048 U | 0.0000047 U | 0.0000048 U |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/L | 0.0000048 U | 0.0000048 U | 0.0000047 U | 0.0000048 U | 0.0000048 U | 0.0000047 U | 0.0000048 U |
| PEST/PCB | METHOXYCHLOR | MG/L | 0.000048 U | 0.000048 U | 0.000047 U | 0.000048 U | 0.000048 U | 0.000047 U | 0.000048 U |
| PEST/PCB | TOXAPHENE | MG/L | 0.00048 U | 0.00048 U | 0.00047 U | 0.00048 U | 0.00048 U | 0.00047 U | 0.00048 U |
| SVOC | 1,1'-BIPHENYL | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | 1,2,4,5-TETRACHLOROBENZENE | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | 2,2'-OXYBIS(1-CHLOROPROPANE) | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | 2,3,4,6-TETRACHLOROPHENOL | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | 2,4,5-TRICHLOROPHENOL | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | 2,4,6-TRICHLOROPHENOL | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | 2,4-DICHLOROPHENOL | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | 2,4-DIMETHYLPHENOL | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | 2,4-DINITROPHENOL | MG/L | 0.0095 U | 0.0095 U | 0.0095 U | 0.0096 U | 0.0094 U | 0.0094 U | 0.0094 U |
| SVOC | 2,4-DINITROTOLUENE | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | 2,6-DINITROTOLUENE | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | 2-CHLORONAPHTHALENE | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | 2-CHLOROPHENOL | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | 2-METHYLNAPHTHALENE | MG/L | 0.000095 U | 0.000095 U | 0.000095 U | 0.000096 U | 0.000094 U | 0.000094 U | 0.000094 U |
| SVOC | 2-METHYLPHENOL | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | 2-NITROANILINE | MG/L | 0.0095 U | 0.0095 U | 0.0095 U | 0.0096 U | 0.0094 U | 0.0094 U | 0.0094 U |
| SVOC | 2-NITROPHENOL | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | 3,3'-DICHLOROBENZIDINE | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | 3-NITROANILINE | MG/L | 0.0095 U | 0.0095 U | 0.0095 U | 0.0096 U | 0.0094 U | 0.0094 U | 0.0094 U |
| SVOC | 4,6-DINITRO-2-METHYLPHENOL | MG/L | 0.0095 U | 0.0095 U | 0.0095 U | 0.0096 U | 0.0094 U | 0.0094 U | 0.0094 U |
| SVOC | 4-BROMOPHENYL PHENYL ETHER | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | 4-CHLORO-3-METHYLPHENOL | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | 4-CHLOROANILINE | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | 4-CHLOROPHENYL-PHENYL ETHER | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | 4-METHYLPHENOL | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0011 J |
| SVOC | 4-NITROANILINE | MG/L | 0.0095 U | 0.0095 U | 0.0095 U | 0.0096 U | 0.0094 U | 0.0094 U | 0.0094 U |
| SVOC | 4-NITROPHENOL | MG/L | 0.0095 U | 0.0095 U | 0.0095 U | 0.0096 U | 0.0094 U | 0.0094 U | 0.0094 U |
| SVOC | ACENAPHTHENE | MG/L | 0.000095 U | 0.000095 U | 0.000019 J | 0.000096 U | 0.000094 U | 0.000094 U | 0.000094 U |
| SVOC | ACENAPHTHYLENE | MG/L | 0.000095 U | 0.000095 U | 0.000095 U | 0.000096 U | 0.000094 U | 0.000094 U | 0.000094 U |
| SVOC | ACETOPHENONE | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | ANTHRACENE | MG/L | 0.000095 U | 0.000095 U | 0.000056 J | 0.000096 U | 0.000094 U | 0.000094 U | 0.000094 U |
| SVOC | ATRAZINE | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | BENZALDEHYDE | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | BENZO(A)ANTHRACENE | MG/L | 0.000095 U | 0.000095 U | 0.00024 | 0.000096 U | 0.000094 U | 0.000094 U | 0.000094 U |
| SVOC | BENZO(A)PYRENE | MG/L | 0.00018 U | 0.00016 U | 0.00053 | 0.00018 U | 0.00018 U | 0.00019 U | 0.00015 U |
| SVOC | BENZO(B)FLUORANTHENE | MG/L | 0.000095 U | 0.000095 U | 0.00048 | 0.000096 U | 0.000094 U | 0.000094 U | 0.000026 J |
| SVOC | BENZO(G,H,I)PERYLENE | MG/L | 0.000095 U | 0.000095 U | 0.00027 | 0.000096 U | 0.000094 U | 0.000094 U | 0.000094 U |

**Table 3 Surface Water Data (Including Field Duplicates and Rejected Data)**

| Group | Analyte | Exposure Area | SL | SL | SL | SL | SL | SL | SL |
|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | SLDW0010 | SLDW0011 | SLDW0012 | SLDW0013 | SLDW0014 | SLDW0015 | SLDW0016 |
| | | Field Sample ID | SLDW0010-SW-AM-R1-1 | SLDW0011-SW-AB-R1-0 | SLDW0012-SW-AA-R1-0 | SLDW0013-SW-AB-R1-0 | SLDW0014-SW-AG-R1-0 | SLDW0015-SW-AA-R1-0 | SLDW0016-SW-AA-R1-0 |
| | | Sample Date | 4/27/2010 | 4/27/2010 | 4/27/2010 | 4/27/2010 | 4/28/2010 | 4/28/2010 | 4/28/2010 |
| | | Depth (ft) | 6 | 0.5 | 0-0.5 | 0.5 | 3 | 0-0.5 | 0-0.5 |
| | | Units | | | | | | | |
| SVOC | BENZO(K)FLUORANTHENE | MG/L | 0.000095 UJ | 0.000095 UJ | 0.00027 J | 0.000096 UJ | 0.000094 UJ | 0.000094 UJ | 0.000094 UJ |
| SVOC | BENZYL BUTYL PHTHALATE | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | BIS(2-CHLOROETHOXY) METHANE | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/L | 0.00097 J | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | CAPROLACTAM | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | CARBAZOLE | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | CHRYSENE | MG/L | 0.000095 U | 0.000095 U | 0.00041 | 0.000096 U | 0.000094 U | 0.000094 U | 0.000026 J |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/L | 0.000095 U | 0.000095 U | 0.0001 | 0.000096 U | 0.000094 U | 0.000094 U | 0.000094 U |
| SVOC | DIBENZOFURAN | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | DIETHYLPHTHALATE | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | DIMETHYLPHTHALATE | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | DI-N-BUTYLPHTHALATE | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | DI-N-OCTYLPHTHALATE | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | FLUORANTHENE | MG/L | 0.000044 J | 0.00004 J | 0.00094 | 0.00006 J | 0.000094 U | 0.000046 J | 0.000075 J |
| SVOC | FLUORENE | MG/L | 0.000095 U | 0.000095 U | 0.000095 U | 0.000096 U | 0.000094 U | 0.000094 U | 0.000094 U |
| SVOC | HEXACHLOROBENZENE | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | HEXACHLOROBUTADIENE | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | HEXACHLOROCYCLOPENTADIENE | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | HEXACHLOROETHANE | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/L | 0.000095 U | 0.000095 U | 0.00027 | 0.000096 U | 0.000094 U | 0.000094 U | 0.000094 U |
| SVOC | ISOPHORONE | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | NAPHTHALENE | MG/L | 0.000095 U | 0.000095 U | 0.000095 U | 0.000096 U | 0.000094 U | 0.000094 U | 0.000094 U |
| SVOC | NITROBENZENE | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | N-NITROSODI-N-PROPYLAMINE | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | N-NITROSODIPHENYLAMINE | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | PENTACHLOROPHENOL | MG/L | 0.00019 UJ | 0.00019 UJ | 0.00019 UJ | 0.00019 UJ | 0.00019 UJ | 0.00019 UJ | 0.000047 J |
| SVOC | PHENANTHRENE | MG/L | 0.00003 J | 0.000027 J | 0.00044 | 0.000036 J | 0.000094 U | 0.000024 J | 0.000035 J |
| SVOC | PHENOL | MG/L | 0.0048 U | 0.0048 U | 0.0047 U | 0.0048 U | 0.0047 U | 0.0047 U | 0.0047 U |
| SVOC | PYRENE | MG/L | 0.000095 U | 0.000095 U | 0.00052 | 0.000096 U | 0.000094 U | 0.000094 U | 0.000094 U |
| VOC | 1,1,1-TRICHLOROETHANE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | 1,1,2,2-TETRACHLOROETHANE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | 1,1,2-TRICHLOROETHANE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | 1,1,2-TRICHLOROTRIFLUOROETHANE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | 1,1-DICHLOROETHANE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | 1,1-DICHLOROETHENE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | 1,2,3-TRICHLOROBENZENE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | 1,2,4-TRICHLOROBENZENE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | 1,2-DIBROMO-3-CHLOROPROPANE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | 1,2-DIBROMOETHANE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | 1,2-DICHLOROBENZENE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | 1,2-DICHLOROETHANE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | 1,2-DICHLOROPROPANE | MG/L | 0.0005 UJ | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | 1,3-DICHLOROBENZENE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | 1,4-DICHLOROBENZENE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | 2-HEXANONE | MG/L | 0.005 U | 0.005 U | 0.005 U | 0.005 U | 0.005 U | 0.005 U | 0.005 U |
| VOC | 4-METHYL-2-PENTANONE | MG/L | 0.005 U | 0.005 U | 0.005 U | 0.005 U | 0.005 U | 0.005 U | 0.005 U |
| VOC | ACETONE | MG/L | 0.005 U | 0.005 U | 0.005 U | 0.005 U | 0.005 U | 0.005 U | 0.005 U |
| VOC | BENZENE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | BROMOCHLOROMETHANE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | BROMODICHLOROMETHANE | MG/L | 0.0005 UJ | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | BROMOFORM | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | BROMOMETHANE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | CARBON DISULFIDE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | CARBON TETRACHLORIDE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | CHLOROBENZENE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | CHLOROETHANE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | CHLOROFORM | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | CHLOROMETHANE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | CIS-1,2-DICHLOROETHENE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | CIS-1,3-DICHLOROPROPENE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | CYCLOHEXANE | MG/L | 0.0005 UJ | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | DIBROMOCHLOROMETHANE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | DICHLORODIFLUOROMETHANE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | DICHLOROMETHANE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | ETHYLBENZENE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | ISOPROPYLBENZENE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | METHYL ACETATE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | METHYL ETHYL KETONE | MG/L | 0.005 U | 0.005 U | 0.005 U | 0.005 U | 0.005 U | 0.005 U | 0.005 U |
| VOC | METHYLCYCLOHEXANE | MG/L | 0.0005 UJ | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | METHYL-TERT-BUTYL-ETHER (MTBE) | MG/L | 0.0009 | 0.00069 | 0.0005 U | 0.0015 | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | STYRENE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | TETRACHLOROETHENE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | TOLUENE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.00036 J |
| VOC | TRANS-1,2-DICHLOROETHENE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | TRANS-1,3-DICHLOROPROPENE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | TRICHLOROETHYLENE (TCE) | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | TRICHLOROFLUOROMETHANE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | VINYL CHLORIDE | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | XYLENE, O- | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |
| VOC | XYLENES (TOTAL) | MG/L | | | | | | | |
| VOC | XYLENES, M & P | MG/L | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U | 0.0005 U |

Notes:
U: Not Detected; J: Estimated; R: Rejected.

**Table 4 Kirkwood Lake Fish Sampling Data**

| Group | Analyte | Location | KWBB0001 | KWBB0003 | KWBB0004 | KWBB0005 | KWBB0006 | KWBB0007 | KWBB0008 | KWBB0009 | KWBB0011 | KWBB0012 | KWBB0013 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Sample ID | KWBB0001-TI-AA-R1-0 | KWBB0003-TI-AA-R1-0 | KWBB0004-TI-AA-R1-0 | KWBB0005-TI-AA-R1-0 | KWBB0006-TI-AA-R1-0 | KWBB0007-TI-AA-R1-0 | KWBB0008-TI-AA-R1-0 | KWBB0009-TI-AA-R1-0 | KWBB0011-TI-AA-R1-0 | KWBB0012-TI-AA-R1-0 | KWBB0013-TI-AA-R1-0 |
| | | Sample Date | 9/14/2017 | 9/14/2017 | 9/14/2017 | 9/14/2017 | 9/14/2017 | 9/14/2017 | 9/14/2017 | 9/14/2017 | 9/14/2017 | 9/14/2017 | 9/14/2017 |
| | | Guild | Benthic Omnivore | Benthic Omnivore | Benthic Omnivore | Benthic Omnivore | Benthic Omnivore | Benthic Omnivore | Benthic Omnivore | Benthic Omnivore | Benthic Omnivore | Benthic Omnivore | Benthic Omnivore |
| | | Species | Brown bullhead (BB) | Brown bullhead (BB) | Brown bullhead (BB) | Brown bullhead (BB) | Brown bullhead (BB) | Brown bullhead (BB) | Brown bullhead (BB) | Brown bullhead (BB) | Brown bullhead (BB) | Brown bullhead (BB) | Brown bullhead (BB) |
| | | Skin On/Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off |
| | | Units | | | | | | | | | | | |
| Metals | ALUMINUM | MG/KG | 4.8 U | 4.3 U | 4.8 U | 4.6 U | 4.3 U | 12.5 | 4.2 U | 4.1 U | 4.7 U | 4.3 U | 4.1 U |
| Metals | ANTIMONY | MG/KG | 0.19 U | 0.17 U | 0.19 U | 0.18 U | 0.022 J | 0.027 J | 0.024 J | 0.16 U | 0.19 U | 0.022 J | 0.02 J |
| Metals | ARSENIC | MG/KG | 0.13 J | 0.076 J | 0.19 U | 0.18 U | 0.17 U | 0.23 | 0.14 J | 0.16 U | 0.051 J | 0.053 J | 0.16 U |
| Metals | BARIUM | MG/KG | 0.96 U | 0.85 U | 0.96 U | 0.92 U | 0.87 U | 0.54 J | 0.84 U | 0.82 U | 0.93 U | 0.85 U | 0.82 U |
| Metals | BERYLLIUM | MG/KG | 0.096 U | 0.085 U | 0.096 U | 0.092 U | 0.087 U | 0.093 U | 0.084 U | 0.082 U | 0.093 U | 0.085 U | 0.082 U |
| Metals | CADMIUM | MG/KG | 0.096 U | 0.085 U | 0.096 U | 0.092 U | 0.087 U | 0.093 U | 0.084 U | 0.082 U | 0.093 U | 0.085 U | 0.082 U |
| Metals | CALCIUM | MG/KG | 76.9 | 103 | 85.3 | 72.9 | 70.3 | 382 | 99.6 | 80.3 | 212 | 88 | 76.2 |
| Metals | CHROMIUM | MG/KG | 0.11 J | 0.094 J | 0.15 J | 2.5 | 0.1 J | 15 | 0.13 J | 6.8 | 2.7 | 3.6 | 0.11 J |
| Metals | COBALT | MG/KG | 0.096 U | 0.085 U | 0.096 U | 0.097 | 0.087 U | 0.16 | 0.084 U | 0.12 | 0.028 J | 0.036 J | 0.082 U |
| Metals | COPPER | MG/KG | 0.26 J | 0.32 J | 0.18 J | 0.36 J | 0.27 J | 2.4 | 0.42 | 0.55 | 0.31 J | 0.3 J | 0.25 J |
| Metals | CYANIDE | MG/KG | 0.45 U | 0.36 U | 0.5 U | 0.53 U | 0.34 U | 0.49 U | 0.52 U | 0.52 U | 0.49 U | 0.48 U | 0.53 U |
| Metals | IRON | MG/KG | 9 J | 7.8 J | 19.2 U | 22.1 | 10.8 J | 95.3 | 10.7 J | 38 | 18.1 J | 25.5 | 16.4 U |
| Metals | LEAD | MG/KG | 0.096 U | 0.041 J | 0.096 U | 0.092 U | 0.087 U | 0.72 | 0.084 U | 0.082 U | 0.052 J | 0.04 J | 0.082 U |
| Metals | MAGNESIUM | MG/KG | 246 | 222 | 260 | 201 | 221 | 286 | 244 | 213 | 205 | 227 | 234 |
| Metals | MANGANESE | MG/KG | 0.2 | 0.19 | 0.11 J | 0.55 | 0.12 J | 2.2 | 0.13 J | 0.93 | 0.54 | 0.81 | 0.23 |
| Metals | MERCURY | MG/KG | 0.031 J | 0.035 U | 0.037 U | 0.02 J | 0.037 U | 0.042 | 0.04 U | 0.038 U | 0.037 U | 0.034 U | 0.037 U |
| Metals | NICKEL | MG/KG | 0.19 U | 0.17 U | 0.19 U | 1.6 | 0.17 U | 8.9 | 0.17 U | 4 | 1.6 | 2.1 | 0.16 U |
| Metals | POTASSIUM | MG/KG | 3990 | 3430 | 3850 | 3120 | 3610 | 3430 | 4160 | 3500 | 3310 | 3550 | 3880 |
| Metals | SELENIUM | MG/KG | 0.082 J | 0.062 J | 0.38 U | 0.37 U | 0.35 U | 0.073 J | 0.097 J | 0.078 J | 0.37 U | 0.34 U | 0.33 U |
| Metals | SILVER | MG/KG | 0.096 U | 0.085 U | 0.096 U | 0.092 U | 0.087 U | 0.093 U | 0.084 U | 0.082 U | 0.093 U | 0.085 U | 0.082 U |
| Metals | SODIUM | MG/KG | 449 | 745 | 454 | 622 | 597 | 664 | 599 | 525 | 320 | 492 | 410 |
| Metals | THALLIUM | MG/KG | 0.19 UJ | 0.17 UJ | 0.19 UJ | 0.18 UJ | 0.17 UJ | 0.19 UJ | 0.17 UJ | 0.16 UJ | 0.19 UJ | 0.17 UJ | 0.16 UJ |
| Metals | VANADIUM | MG/KG | 0.48 U | 0.43 U | 0.48 U | 0.46 U | 0.43 U | 0.46 U | 0.42 U | 0.41 U | 0.47 U | 0.43 U | 0.41 U |
| Metals | ZINC | MG/KG | 3.2 | 3.7 | 3 | 4 | 3.8 | 4.4 | 4 | 3.9 | 3 | 3.4 | 3.7 |
| PEST/PCB | 4,4'-DDD | MG/KG | 0.0089 | 0.00046 | 0.0069 | 0.00099 | 0.00031 U | 0.0013 | 0.0018 | 0.0029 | 0.0024 J | 0.0081 | 0.0054 |
| PEST/PCB | 4,4'-DDE | MG/KG | 0.013 | 0.0016 | 0.011 | 0.0028 | 0.0049 | 0.0028 | 0.0035 | 0.01 | 0.0051 | 0.016 | 0.012 |
| PEST/PCB | 4,4'-DDT | MG/KG | 0.00031 U | 0.0003 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.0003 U | 0.0003 U | 0.0003 U | 0.0003 U | 0.00031 U | 0.00031 U |
| PEST/PCB | ALDRIN | MG/KG | 0.00031 U | 0.0003 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.0003 U | 0.0003 U | 0.0003 U | 0.0003 U | 0.00031 U | 0.00031 U |
| PEST/PCB | ALPHA-BHC | MG/KG | 0.00031 U | 0.0003 U | 0.00031 U | 0.00016 J | 0.00031 U | 0.0003 U | 0.0003 U | 0.0003 U | 0.0003 U | 0.00031 U | 0.00031 U |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | 0.0014 J | 0.0003 U | 0.0013 J | 0.00027 J | 0.00091 J | 0.0003 U | 0.0003 J | 0.00071 J | 0.00046 J | 0.001 J | 0.0013 J |
| PEST/PCB | AROCLOR-1016 | MG/KG | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0062 U |
| PEST/PCB | AROCLOR-1221 | MG/KG | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0062 U |
| PEST/PCB | AROCLOR-1232 | MG/KG | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0062 U |
| PEST/PCB | AROCLOR-1242 | MG/KG | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0062 U |
| PEST/PCB | AROCLOR-1248 | MG/KG | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0062 U |
| PEST/PCB | AROCLOR-1254 | MG/KG | 0.034 | 0.0064 | 0.027 J | 0.0063 | 0.0094 | 0.0062 | 0.0084 | 0.017 | 0.015 | 0.022 J | 0.054 |
| PEST/PCB | AROCLOR-1260 | MG/KG | 0.043 | 0.011 | 0.028 | 0.0072 | 0.013 | 0.0079 | 0.011 | 0.025 | 0.018 | 0.027 | 0.034 |
| PEST/PCB | BETA-BHC | MG/KG | 0.00031 U | 0.0003 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.0003 U | 0.0003 U | 0.0003 U | 0.0003 U | 0.00031 U | 0.00031 U |
| PEST/PCB | DELTA-BHC | MG/KG | 0.00031 U | 0.0003 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.0003 U | 0.0003 U | 0.0003 U | 0.0003 U | 0.00031 U | 0.00031 U |
| PEST/PCB | DIELDRIN | MG/KG | 0.00031 U | 0.0003 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.0003 U | 0.0003 U | 0.0003 U | 0.0003 U | 0.00031 U | 0.00031 U |
| PEST/PCB | ENDOSULFAN I | MG/KG | 0.00031 U | 0.0003 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.0003 U | 0.0003 U | 0.0003 U | 0.0003 U | 0.00031 U | 0.00031 U |
| PEST/PCB | ENDOSULFAN II | MG/KG | 0.00031 U | 0.0003 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.0003 U | 0.0003 U | 0.0003 U | 0.0003 U | 0.00031 U | 0.00031 U |
| PEST/PCB | ENDRIN | MG/KG | 0.0016 J | 0.00033 | 0.002 | 0.00048 | 0.0004 J | 0.00054 | 0.00074 J | 0.00091 J | 0.00096 | 0.0024 | 0.0018 |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | 0.00031 U | 0.0003 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.0003 U | 0.0003 U | 0.0003 U | 0.0003 U | 0.00031 U | 0.00031 U |
| PEST/PCB | ENDRIN KETONE | MG/KG | 0.00031 U | 0.0003 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.0003 U | 0.0003 U | 0.0003 U | 0.0003 U | 0.00031 U | 0.00031 U |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | 0.00031 U | 0.0003 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.0003 U | 0.0003 U | 0.0003 U | 0.0003 U | 0.00031 U | 0.00031 U |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | 0.00031 U | 0.0003 U | 0.00031 U | 0.00053 J | 0.00031 U | 0.0003 U | 0.0003 U | 0.0003 U | 0.0003 U | 0.0021 | 0.00031 U |
| PEST/PCB | HEPTACHLOR | MG/KG | 0.00031 U | 0.0003 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.0003 U | 0.0003 U | 0.0003 U | 0.0003 U | 0.00031 U | 0.00031 U |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | 0.00027 J | 0.0003 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.0003 U | 0.0003 U | 0.0003 U | 0.0003 U | 0.00031 U | 0.00031 U |
| PEST/PCB | HEXACHLOROBENZENE | MG/KG | 0.0006 | 0.0003 U | 0.00047 | 0.0006 J | 0.00042 | 0.00011 J | 0.0003 U | 0.00075 | 0.0003 U | 0.00043 | 0.00037 J |
| SVOC | 1,1-BIPHENYL | MG/KG | 0.0019 U | 0.002 U | 0.002 U | 0.0019 U | 0.002 U | 0.002 U | 0.002 U | 0.002 U | 0.0021 U | 0.002 U | 0.0021 U |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | 0.5 U | 0.47 U | 0.48 U | 0.5 U | 0.5 U | 0.48 U | 0.5 U | 0.5 U | 0.5 U | 0.47 U | 0.48 U |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | 0.0019 UJ | 0.002 UJ | 0.002 U | 0.0019 U | 0.002 U | 0.002 U | 0.002 U | 0.002 U | 0.0021 U | 0.002 U | 0.0021 UJ |
| SVOC | 4-CHLOROANILINE | MG/KG | 0.5 U | 0.47 U | 0.48 U | 0.5 U | 0.5 U | 0.48 U | 0.5 U | 0.5 U | 0.5 U | 0.47 U | 0.48 U |
| SVOC | ACENAPHTHENE | MG/KG | 0.00039 J | 0.002 UJ | 0.00048 J | 0.0019 U | 0.002 U | 0.00039 J | 0.002 U | 0.0003 J | 0.00041 J | 0.00041 J | 0.00042 J |
| SVOC | ACENAPHTHYLENE | MG/KG | 0.0019 UJ | 0.002 UJ | 0.002 U | 0.0019 U | 0.002 U | 0.002 U | 0.002 U | 0.002 U | 0.0021 U | 0.002 U | 0.0021 UJ |
| SVOC | ACETOPHENONE | MG/KG | 0.073 J | 0.067 J | 0.057 J | 0.072 J | 0.065 J | 0.072 J | 0.068 J | 0.06 J | 0.071 J | 0.057 J | 0.066 J |
| SVOC | ANTHRACENE | MG/KG | 0.0019 UJ | 0.002 UJ | 0.002 U | 0.0019 U | 0.002 U | 0.002 U | 0.002 U | 0.002 U | 0.0021 U | 0.002 U | 0.0021 UJ |
| SVOC | BENZALDEHYDE | MG/KG | 1 U | 0.96 U | 0.98 U | 1 U | 1 U | 0.98 U | 1 U | 1 U | 1 U | 0.96 U | 0.98 U |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.0019 U | 0.002 U | 0.002 U | 0.0019 U | 0.002 U | 0.0012 J | 0.002 U | 0.002 U | 0.0021 U | 0.002 U | 0.0021 U |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 0.0019 U | 0.002 U | 0.002 U | 0.0019 U | 0.002 U | 0.0014 J | 0.002 U | 0.002 U | 0.0021 U | 0.002 U | 0.0021 U |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.0019 U | 0.002 U | 0.002 U | 0.0019 U | 0.002 U | 0.00077 J | 0.002 U | 0.002 U | 0.0021 U | 0.002 U | 0.0021 U |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.0019 U | 0.002 U | 0.002 U | 0.0019 U | 0.002 U | 0.0013 J | 0.002 U | 0.002 U | 0.0021 U | 0.002 U | 0.0021 U |
| SVOC | BENZO[A]PYRENE | MG/KG | 0.0019 U | 0.002 U | 0.002 U | 0.0019 U | 0.002 U | 0.00093 J | 0.002 U | 0.002 U | 0.0021 U | 0.002 U | 0.0021 U |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | 0.1 U | 0.096 U | 0.098 U | 0.1 U | 0.1 U | 0.098 U | 0.1 U | 0.1 U | 0.1 U | 0.096 U | 0.098 U |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | 1 U | 0.95 U | 0.98 U | 1 U | 1 U | 0.98 U | 1 U | 1 U | 1 U | 0.95 U | 0.98 U |
| SVOC | BUTYL BENZYL PHTHALATE | MG/KG | 0.5 U | 0.47 U | 0.48 U | 0.5 U | 0.5 U | 0.48 U | 0.5 U | 0.5 U | 0.5 U | 0.47 U | 0.48 U |
| SVOC | CAPROLACTAM | MG/KG | 2.6 U | 2.4 U | 2.5 U | 2.6 U | 2.6 U | 2.5 U | 2.6 U | 2.6 U | 2.6 U | 2.4 U | 2.5 U |
| SVOC | CARBAZOLE | MG/KG | 0.1 U | 0.096 U | 0.098 U | 0.1 U | 0.1 U | 0.098 U | 0.1 U | 0.1 U | 0.1 U | 0.096 U | 0.098 U |
| SVOC | CHRYSENE | MG/KG | 0.0019 U | 0.002 U | 0.002 U | 0.0019 U | 0.002 U | 0.002 | 0.002 U | 0.002 U | 0.0021 U | 0.002 U | 0.0021 U |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.0019 U | 0.002 U | 0.002 U | 0.0019 U | 0.002 U | 0.002 U | 0.002 U | 0.002 U | 0.0021 U | 0.002 U | 0.0021 U |
| SVOC | DIBENZOFURAN | MG/KG | 0.5 U | 0.47 U | 0.48 U | 0.5 U | 0.5 U | 0.48 U | 0.5 U | 0.5 U | 0.5 U | 0.47 U | 0.48 U |
| SVOC | DIETHYL PHTHALATE | MG/KG | 0.5 U | 0.053 J | 0.48 U | 0.5 U | 0.5 U | 0.48 U | 0.5 U | 0.06 J | 0.5 U | 0.47 U | 0.48 U |
| SVOC | DI-N-BUTYL PHTHALATE | MG/KG | 0.5 U | 0.47 U | 0.48 U | 0.5 U | 0.5 U | 0.48 U | 0.5 U | 0.5 U | 0.5 U | 0.47 U | 0.48 U |
| SVOC | DI-N-OCTYL PHTHALATE | MG/KG | 0.5 U | 0.47 U | 0.48 U | 0.5 U | 0.5 U | 0.48 U | 0.5 U | 0.5 U | 0.5 U | 0.47 U | 0.48 U |
| SVOC | FLUORANTHENE | MG/KG | 0.0011 J | 0.002 U | 0.002 U | 0.0019 U | 0.002 U | 0.0032 | 0.002 U | 0.002 U | 0.0013 J | 0.002 U | 0.0021 U |
| SVOC | FLUORENE | MG/KG | 0.0019 UJ | 0.002 U | 0.002 U | 0.0019 U | 0.002 U | 0.002 U | 0.002 U | 0.002 U | 0.0021 U | 0.002 U | 0.0021 U |
| SVOC | HEXACHLOROBENZENE | MG/KG | 0.1 U | 0.096 U | 0.098 U | 0.1 U | 0.1 U | 0.098 U | 0.1 U | 0.1 U | 0.1 U | 0.096 U | 0.098 U |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.0019 U | 0.002 U | 0.002 U | 0.0019 U | 0.002 U | 0.0007 J | 0.002 U | 0.002 U | 0.0021 U | 0.002 U | 0.0021 U |
| SVOC | METHYLPHENOL, 3 & 4 | MG/KG | 0.5 U | 0.47 U | 0.48 U | 0.5 U | 0.5 U | 0.48 U | 0.5 U | 0.5 U | 0.5 U | 0.47 U | 0.48 U |
| SVOC | NAPHTHALENE | MG/KG | 0.0019 UJ | 0.002 UJ | 0.002 U | 0.0019 U | 0.002 U | 0.002 U | 0.002 U | 0.002 U | 0.0021 U | 0.002 U | 0.0021 UJ |
| SVOC | PENTACHLOROPHENOL | MG/KG | 2.6 U | 2.4 U | 2.5 U | 2.6 U | 2.6 U | 2.5 U | 2.6 U | 2.6 U | 2.6 U | 2.4 U | 2.5 U |
| SVOC | PHENANTHRENE | MG/KG | 0.0018 J | 0.002 UJ | 0.0015 J | 0.0019 U | 0.002 U | 0.0026 | 0.002 U | 0.0011 J | 0.0018 J | 0.0013 J | 0.0018 J |
| SVOC | PHENOL | MG/KG | 0.5 U | 0.47 U | 0.48 U | 0.5 U | 0.5 U | 0.48 U | 0.5 U | 0.5 U | 0.5 U | 0.47 U | 0.48 U |
| SVOC | PYRENE | MG/KG | 0.0019 U | 0.002 U | 0.002 U | 0.0019 U | 0.002 U | 0.0038 J | 0.002 U | 0.002 U | 0.00094 J | 0.002 U | 0.0021 U |
| Wet Chemistry | PERCENT LIPIDS | % | 0.56 | 0.26 | 0.77 | 0.27 | 0.24 U | 0.32 | 0.31 | 0.42 | 0.59 | 0.62 | 0.88 |
| Wet Chemistry | PERCENT SOLIDS | % | 16.8 | 15.9 | 17.7 | 14.7 | 16.3 | 16.5 | 17.2 | 17.6 | 16.4 | 19 | 17.6 |

**Table 4 Kirkwood Lake Fish Sampling Data**

| Group | Analyte | Location | KWBB0014 | KWBB0015 | KWBB0016 | KWBB0017 | KWBB0018 | KWBB0019 | KWBB0020 | KWBB0021 | KWBC0001 | KWBC0002 | KWBC0003 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Sample ID | KWBB0014-TI-AA-R1-0 | KWBB0015-TI-AA-R1-0 | KWBB0016-TI-AA-R1-0 | KWBB0017-TI-AA-R1-0 | KWBB0018-TI-AA-R1-0 | KWBB0019-TI-AA-R1-0 | KWBB0020-TI-AA-R1-0 | KWBB0021-TI-AA-R1-0 | KWBC0001-TI-AA-R1-0 | KWBC0002-TI-AA-R1-0 | KWBC0003-TI-AA-R1-0 |
| | | Sample Date | 9/14/2017 | 9/14/2017 | 9/14/2017 | 9/14/2017 | 9/14/2017 | 9/14/2017 | 9/14/2017 | 9/14/2017 | 9/14/2017 | 9/14/2017 | 9/14/2017 |
| | | Guild | Benthic Omnivore | Benthic Omnivore | Benthic Omnivore | Benthic Omnivore | Benthic Omnivore | Benthic Omnivore | Benthic Omnivore | Benthic Omnivore | Sport Fish | Sport Fish | Sport Fish |
| | | Species | Brown bullhead (BB) | Brown bullhead (BB) | Brown bullhead (BB) | Brown bullhead (BB) | Brown bullhead (BB) | Brown bullhead (BB) | Brown bullhead (BB) | Brown bullhead (BB) | Black crappie (BC) | Black crappie (BC) | Black crappie (BC) |
| | | Skin On/Off | Off | Off | Off | Off | Off | Off | Off | Off | On | Off | Off |
| | | Units | | | | | | | | | | | |
| Metals | ALUMINUM | MG/KG | 4.2 U | 4.4 U | 4.9 U | 9.7 | 4.7 U | 5 U | 4.4 U | 4.5 U | 5 U | 5 U | 4.4 U |
| Metals | ANTIMONY | MG/KG | 0.025 J | 0.027 J | 0.041 J | 0.025 J | 0.19 U | 0.2 U | 0.022 J | 0.024 J | 0.025 J | 0.027 J | 0.18 U |
| Metals | ARSENIC | MG/KG | 0.16 J | 0.053 J | 0.057 J | 0.17 U | 0.086 J | 0.2 U | 0.055 J | 0.18 U | 0.065 J | 0.2 U | 0.18 U |
| Metals | BARIUM | MG/KG | 0.83 U | 0.88 U | 0.98 U | 0.21 J | 0.94 U | 0.99 U | 0.88 U | 0.91 U | 0.28 J | 0.99 U | 0.88 U |
| Metals | BERYLLIUM | MG/KG | 0.083 U | 0.088 U | 0.098 U | 0.085 U | 0.094 U | 0.099 U | 0.088 U | 0.091 U | 0.1 U | 0.099 U | 0.088 U |
| Metals | CADMIUM | MG/KG | 0.083 U | 0.088 U | 0.098 U | 0.085 U | 0.094 U | 0.099 U | 0.088 U | 0.091 U | 0.1 U | 0.099 U | 0.088 U |
| Metals | CALCIUM | MG/KG | 79.9 | 125 | 82.5 | 93.8 | 68.1 | 60.7 | 86.4 | 76 | 1200 | 365 | 424 |
| Metals | CHROMIUM | MG/KG | 1.1 | 0.1 J | 2.8 | 4.2 | 1.2 | 0.4 U | 1.8 | 2.2 | 0.11 J | 1.9 | 0.17 J |
| Metals | COBALT | MG/KG | 0.014 J | 0.088 U | 0.19 | 0.046 J | 0.017 J | 0.099 U | 0.023 J | 0.03 J | 0.1 U | 0.023 J | 0.088 U |
| Metals | COPPER | MG/KG | 0.34 J | 0.21 J | 0.36 J | 0.4 J | 0.44 J | 0.3 J | 0.31 J | 0.42 J | 0.74 | 0.18 J | 0.44 U |
| Metals | CYANIDE | MG/KG | 0.5 U | 0.52 U | 0.48 U | 0.52 U | 0.51 U | 0.51 U | 0.48 U | 0.51 U | 0.51 U | 0.48 U | 0.5 U |
| Metals | IRON | MG/KG | 13.7 J | 17.7 U | 19.6 | 37.1 | 13.5 J | 19.8 U | 13.4 J | 16.4 J | 20 U | 10.5 J | 17.5 U |
| Metals | LEAD | MG/KG | 0.083 U | 0.088 U | 0.053 J | 0.16 | 0.094 U | 0.099 U | 0.033 J | 0.091 U | 0.057 J | 0.099 U | 0.088 U |
| Metals | MAGNESIUM | MG/KG | 246 | 263 | 254 | 274 | 193 | 225 | 275 | 246 | 275 | 270 | 251 |
| Metals | MANGANESE | MG/KG | 0.27 | 0.16 J | 0.74 | 1.5 | 0.21 | 0.2 U | 0.25 | 0.3 | 0.18 J | 0.3 | 0.15 J |
| Metals | MERCURY | MG/KG | 0.073 | 0.034 U | 0.039 U | 0.032 U | 0.016 J | 0.023 J | 0.035 U | 0.04 U | 0.078 | 0.083 | 0.049 |
| Metals | NICKEL | MG/KG | 0.69 | 0.18 U | 1.6 | 2.4 | 0.72 | 0.053 J | 1 | 1.2 | 0.06 J | 1.1 | 0.1 J |
| Metals | POTASSIUM | MG/KG | 4120 | 3910 | 3890 | 3840 | 3330 | 3810 | 4000 | 4520 | 3650 | 3810 | 3260 |
| Metals | SELENIUM | MG/KG | 0.077 J | 0.064 J | 0.39 U | 0.34 U | 0.38 U | 0.4 U | 0.35 U | 0.36 U | 0.2 J | 0.16 J | 0.17 J |
| Metals | SILVER | MG/KG | 0.083 U | 0.088 U | 0.098 U | 0.085 U | 0.094 U | 0.099 U | 0.088 U | 0.091 U | 0.1 U | 0.099 U | 0.088 U |
| Metals | SODIUM | MG/KG | 520 | 583 | 428 | 634 | 773 | 485 | 526 | 394 | 535 | 534 | 488 |
| Metals | THALLIUM | MG/KG | 0.17 UJ | 0.18 UJ | 0.2 UJ | 0.17 UJ | 0.19 UJ | 0.2 UJ | 0.18 UJ | 0.18 UJ | 0.2 UJ | 0.2 UJ | 0.18 UJ |
| Metals | VANADIUM | MG/KG | 0.42 U | 0.44 U | 0.49 U | 0.43 U | 0.47 U | 0.5 U | 0.44 U | 0.45 U | 0.5 U | 0.5 U | 0.44 U |
| Metals | ZINC | MG/KG | 3.8 | 3.6 | 3.5 | 3.4 | 3.8 | 3.5 | 3.9 | 4.1 | 8.6 | 6.4 | 7.7 |
| PEST/PCB | 4,4'-DDD | MG/KG | 0.0012 | 0.0015 J | 0.0016 | 0.00069 | 0.00031 U | 0.0032 | 0.006 | 0.0014 | 0.00074 | 0.00022 J | 0.0012 |
| PEST/PCB | 4,4'-DDE | MG/KG | 0.0028 | 0.0036 | 0.0067 | 0.002 | 0.001 | 0.0093 | 0.013 | 0.0048 | 0.0011 | 0.00061 | 0.0017 |
| PEST/PCB | 4,4'-DDT | MG/KG | 0.00031 U | 0.0003 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U |
| PEST/PCB | ALDRIN | MG/KG | 0.00031 U | 0.0003 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U |
| PEST/PCB | ALPHA-BHC | MG/KG | 0.00031 U | 0.0003 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | 0.0003 J | 0.00046 J | 0.00071 J | 0.00031 U | 0.00031 U | 0.00045 J | 0.0014 J | 0.00028 J | 0.00031 U | 0.00031 U | 0.00031 U |
| PEST/PCB | AROCLOR-1016 | MG/KG | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U |
| PEST/PCB | AROCLOR-1221 | MG/KG | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U |
| PEST/PCB | AROCLOR-1232 | MG/KG | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U |
| PEST/PCB | AROCLOR-1242 | MG/KG | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U |
| PEST/PCB | AROCLOR-1248 | MG/KG | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U |
| PEST/PCB | AROCLOR-1254 | MG/KG | 0.0071 J | 0.013 J | 0.0092 | 0.004 | 0.0068 J | 0.025 J | 0.039 | 0.019 J | 0.0067 J | 0.0029 J | 0.0077 J |
| PEST/PCB | AROCLOR-1260 | MG/KG | 0.0088 | 0.015 | 0.011 | 0.0055 | 0.0054 | 0.014 | 0.017 | 0.012 | 0.0024 J | 0.0031 U | 0.0026 J |
| PEST/PCB | BETA-BHC | MG/KG | 0.00031 U | 0.0003 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U |
| PEST/PCB | DELTA-BHC | MG/KG | 0.00031 U | 0.0003 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U |
| PEST/PCB | DIELDRIN | MG/KG | 0.00031 U | 0.0003 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U |
| PEST/PCB | ENDOSULFAN I | MG/KG | 0.00031 U | 0.0003 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U |
| PEST/PCB | ENDOSULFAN II | MG/KG | 0.00031 U | 0.0003 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U |
| PEST/PCB | ENDRIN | MG/KG | 0.00035 J | 0.00068 J | 0.00057 J | 0.00046 J | 0.00031 U | 0.0016 | 0.0012 J | 0.0006 J | 0.00056 | 0.00034 | 0.00061 |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | 0.00031 U | 0.0003 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U |
| PEST/PCB | ENDRIN KETONE | MG/KG | 0.00031 U | 0.0003 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | 0.00031 U | 0.0003 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | 0.00031 U | 0.0014 | 0.00031 U | 0.00057 J | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U |
| PEST/PCB | HEPTACHLOR | MG/KG | 0.00031 U | 0.0003 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | 0.00031 U | 0.0003 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00016 J | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U |
| PEST/PCB | HEXACHLOROBENZENE | MG/KG | 0.00031 U | 0.000093 J | 0.0004 | 0.00017 J | 0.00031 U | 0.00037 J | 0.00031 U | 0.00036 J | 0.00032 J | 0.00031 J | 0.00031 U |
| SVOC | 1,1-BIPHENYL | MG/KG | 0.0021 U | 0.0021 U | 0.002 U | 0.002 U | 0.0021 U | 0.0019 U | 0.0021 U | 0.0021 U | 0.002 U | 0.002 U | 0.002 U |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | 0.47 U | 0.47 U | 0.48 U | 0.5 U | 0.48 U | 0.5 U | 0.48 U | 0.5 U | 0.48 U | 0.48 U | 0.5 U |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | 0.0021 U | 0.0021 U | 0.002 U | 0.002 U | 0.0021 U | 0.0019 U | 0.0021 U | 0.0021 U | 0.002 UJ | 0.002 U | 0.002 U |
| SVOC | 4-CHLOROANILINE | MG/KG | 0.47 U | 0.47 U | 0.48 U | 0.5 U | 0.48 U | 0.5 U | 0.48 U | 0.5 U | 0.48 U | 0.48 U | 0.5 U |
| SVOC | ACENAPHTHENE | MG/KG | 0.0021 U | 0.00048 J | 0.00047 J | 0.00029 J | 0.0021 U | 0.0019 U | 0.00042 J | 0.0021 U | 0.002 UJ | 0.002 U | 0.002 U |
| SVOC | ACENAPHTHYLENE | MG/KG | 0.0021 U | 0.0021 U | 0.002 U | 0.002 U | 0.0021 U | 0.0019 U | 0.0021 U | 0.0021 U | 0.002 UJ | 0.002 U | 0.002 U |
| SVOC | ACETOPHENONE | MG/KG | 0.065 J | 0.067 J | 0.073 J | 0.072 J | 0.049 J | 0.042 J | 0.055 J | 0.035 J | 0.047 J | 0.058 J | 0.05 J |
| SVOC | ANTHRACENE | MG/KG | 0.0021 U | 0.0021 U | 0.002 U | 0.00038 J | 0.00046 J | 0.0019 UJ | 0.0021 UJ | 0.0021 UJ | 0.002 UJ | 0.002 UJ | 0.002 UJ |
| SVOC | BENZALDEHYDE | MG/KG | 0.96 U | 0.96 U | 0.98 U | 1 U | 0.98 U | 1 U | 0.98 U | 1 U | 0.98 U | 0.98 U | 1 U |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.0021 U | 0.0021 U | 0.002 U | 0.002 U | 0.0021 U | 0.0019 U | 0.0021 U | 0.0021 U | 0.002 U | 0.002 U | 0.002 U |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 0.0021 U | 0.0021 U | 0.002 U | 0.002 U | 0.0021 UJ | 0.0019 UJ | 0.0021 UJ | 0.0021 UJ | 0.002 UJ | 0.002 UJ | 0.002 UJ |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.0021 U | 0.0021 U | 0.002 U | 0.002 U | 0.0021 U | 0.0019 U | 0.0021 U | 0.0021 U | 0.002 U | 0.002 U | 0.002 U |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.0021 U | 0.0021 U | 0.002 U | 0.002 U | 0.0021 U | 0.0019 U | 0.0021 U | 0.0021 U | 0.002 U | 0.002 U | 0.002 U |
| SVOC | BENZO[A]PYRENE | MG/KG | 0.0021 U | 0.0021 U | 0.002 U | 0.002 U | 0.0021 U | 0.0019 U | 0.0021 U | 0.0021 U | 0.002 U | 0.002 U | 0.002 U |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | 0.096 U | 0.096 U | 0.098 U | 0.1 U | 0.098 U | 0.1 U | 0.098 U | 0.1 U | 0.098 U | 0.098 U | 0.1 U |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | 0.95 U | 0.95 U | 0.98 U | 1 U | 0.98 U | 1 U | 0.98 U | 1 U | 0.98 U | 0.98 U | 1 U |
| SVOC | BUTYL BENZYL PHTHALATE | MG/KG | 0.47 U | 0.47 U | 0.48 U | 0.5 U | 0.48 U | 0.5 U | 0.48 U | 0.5 U | 0.48 U | 0.48 U | 0.5 U |
| SVOC | CAPROLACTAM | MG/KG | 2.4 U | 2.4 U | 2.5 U | 2.6 U | 2.5 U | 2.6 U | 2.5 U | 2.6 U | 2.5 U | 2.5 U | 2.6 U |
| SVOC | CARBAZOLE | MG/KG | 0.096 U | 0.096 U | 0.098 U | 0.1 U | 0.098 U | 0.1 U | 0.098 U | 0.1 U | 0.098 U | 0.098 U | 0.1 U |
| SVOC | CHRYSENE | MG/KG | 0.0021 U | 0.0021 U | 0.00059 J | 0.00054 J | 0.0021 U | 0.0019 U | 0.0021 U | 0.0021 U | 0.002 U | 0.002 U | 0.002 U |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.0021 U | 0.0021 U | 0.002 U | 0.002 U | 0.0021 U | 0.0019 U | 0.0021 U | 0.0021 U | 0.002 U | 0.002 U | 0.002 U |
| SVOC | DIBENZOFURAN | MG/KG | 0.47 U | 0.47 U | 0.48 U | 0.5 U | 0.48 U | 0.5 U | 0.48 U | 0.5 U | 0.48 U | 0.48 U | 0.5 U |
| SVOC | DIETHYL PHTHALATE | MG/KG | 0.47 U | 0.47 U | 0.48 U | 0.5 U | 0.48 U | 0.5 U | 0.48 U | 0.056 J | 0.48 U | 0.48 U | 0.5 U |
| SVOC | DI-N-BUTYL PHTHALATE | MG/KG | 0.47 U | 0.47 U | 0.48 U | 0.5 U | 0.48 U | 0.5 U | 0.48 U | 0.5 U | 0.48 U | 0.48 U | 0.5 U |
| SVOC | DI-N-OCTYL PHTHALATE | MG/KG | 0.47 U | 0.47 U | 0.48 U | 0.5 U | 0.48 U | 0.5 U | 0.48 U | 0.5 U | 0.48 U | 0.48 U | 0.5 U |
| SVOC | FLUORANTHENE | MG/KG | 0.0021 U | 0.0021 U | 0.002 U | 0.0024 | 0.0021 UJ | 0.0019 UJ | 0.0021 UJ | 0.0021 UJ | 0.002 UJ | 0.002 UJ | 0.002 UJ |
| SVOC | FLUORENE | MG/KG | 0.0021 U | 0.0021 U | 0.002 U | 0.002 U | 0.0021 UJ | 0.0019 UJ | 0.0021 UJ | 0.0021 UJ | 0.002 UJ | 0.002 UJ | 0.002 UJ |
| SVOC | HEXACHLOROBENZENE | MG/KG | 0.096 U | 0.096 U | 0.098 U | 0.1 U | 0.098 U | 0.1 U | 0.098 U | 0.1 U | 0.098 U | 0.098 U | 0.1 U |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.0021 U | 0.0021 U | 0.002 U | 0.002 U | 0.0021 U | 0.0019 U | 0.0021 U | 0.0021 U | 0.002 UJ | 0.002 U | 0.002 U |
| SVOC | METHYLPHENOL, 3 & 4 | MG/KG | 0.47 U | 0.47 U | 0.48 U | 0.5 U | 0.48 U | 0.5 U | 0.48 U | 0.5 U | 0.48 U | 0.48 U | 0.5 U |
| SVOC | NAPHTHALENE | MG/KG | 0.0021 U | 0.0021 U | 0.002 U | 0.002 U | 0.0021 U | 0.0019 U | 0.0021 U | 0.0021 U | 0.002 UJ | 0.002 U | 0.002 U |
| SVOC | PENTACHLOROPHENOL | MG/KG | 2.4 U | 2.4 U | 2.5 U | 2.6 U | 2.5 U | 2.6 U | 2.5 U | 2.6 U | 2.5 U | 2.5 U | 2.6 U |
| SVOC | PHENANTHRENE | MG/KG | 0.0021 U | 0.0022 | 0.0013 J | 0.0018 J | 0.0021 U | 0.0019 U | 0.0015 J | 0.0021 U | 0.002 UJ | 0.002 U | 0.002 U |
| SVOC | PHENOL | MG/KG | 0.47 U | 0.47 U | 0.48 U | 0.5 U | 0.48 U | 0.5 U | 0.48 U | 0.5 U | 0.48 U | 0.48 U | 0.5 U |
| SVOC | PYRENE | MG/KG | 0.0021 U | 0.0021 U | 0.00096 J | 0.0023 J | 0.0018 J | 0.0019 U | 0.0021 U | 0.0021 U | 0.002 U | 0.002 U | 0.002 U |
| Wet Chemistry | PERCENT LIPIDS | % | 0.27 | 0.47 | 0.43 | 0.3 | 0.26 U | 0.25 | 0.79 | 0.26 U | 0.25 U | 0.25 U | 0.25 U |
| Wet Chemistry | PERCENT SOLIDS | % | 17.6 | 17.1 | 17 | 16.1 | 16.2 | 16.7 | 18.5 | 18.3 | 18 | 19.1 | 17.4 |

**Table 4 Kirkwood Lake Fish Sampling Data**

| Group | Analyte | Location | KWBC0004 | KWBC0005 | KWBC0006 | KWBC0007 | KWBC0008 | KWCC0001 | KWCC0002 | KWCC0002 | KWCC0003 | KWCC0004 | KWCC0005 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Sample ID | KWBC0004-TI-AA-R1-0 | KWBC0005-TI-AA-R1-0 | KWBC0006-TI-AA-R1-0 | KWBC0007-TI-AA-R1-0 | KWBC0008-TI-AA-R1-0 | KWCC0001-TI-AA-R1-0 | KWCC0002-TI-AA-R1-0 | KWCC0002-TI-AA-R1-1 | KWCC0003-TI-AA-R1-0 | KWCC0004-TI-AA-R1-0 | KWCC0005-TI-AA-R1-0 |
| | | Sample Date | 9/14/2017 | 9/14/2017 | 9/14/2017 | 10/26/2017 | 10/26/2017 | 9/14/2017 | 9/14/2017 | 9/14/2017 | 9/14/2017 | 9/15/2017 | 9/14/2017 |
| | | Guild | Sport Fish | Sport Fish | Sport Fish | Sport Fish | Sport Fish | Benthic Omnivore | Benthic Omnivore | Benthic Omnivore | Benthic Omnivore | Benthic Omnivore | Benthic Omnivore |
| | | Species | Black crappie (BC) | Black crappie (BC) | Black crappie (BC) | Black crappie (BC) | Black crappie (BC) | Common carp (CC) | Common carp (CC) | Common carp (CC) | Common carp (CC) | Common carp (CC) | Common carp (CC) |
| | | Skin On/Off | Off | Off | Off | On | On | Off | On | On | Off | Off | Off |
| | | Units | | | | | | | | | | | |
| Metals | ALUMINUM | MG/KG | 4.6 U | 4.8 U | 4.6 U | 4.4 U | 5 U | 3.5 U | 4.1 U | 4.3 U | 4.2 U | 4.4 U | 4.2 U |
| Metals | ANTIMONY | MG/KG | 0.18 U | 0.19 U | 0.18 U | 0.18 U | 0.2 U | 0.14 U | 0.023 J | 0.03 J | 0.17 U | 0.033 J | 0.024 J |
| Metals | ARSENIC | MG/KG | 0.073 J | 0.073 J | 0.094 J | 0.18 U | 0.2 U | 0.055 J | 0.092 J | 0.09 J | 0.081 J | 0.19 | 0.13 J |
| Metals | BARIUM | MG/KG | 0.21 J | 0.96 U | 0.92 U | 0.35 J | 0.99 U | 2.4 | 0.81 U | 1.3 J | 0.18 J | 1.1 J | 0.18 J |
| Metals | BERYLLIUM | MG/KG | 0.092 U | 0.096 U | 0.092 U | 0.088 U | 0.099 U | 0.07 U | 0.081 U | 0.087 U | 0.085 U | 0.088 U | 0.085 U |
| Metals | CADMIUM | MG/KG | 0.092 U | 0.096 U | 0.092 U | 0.088 U | 0.099 U | 0.07 U | 0.081 U | 0.087 U | 0.085 U | 0.088 U | 0.085 U |
| Metals | CALCIUM | MG/KG | 903 | 614 | 112 | 835 J | 231 | 2990 | 172 J | 368 J | 219 | 302 J | 288 |
| Metals | CHROMIUM | MG/KG | 2.2 | 3.3 | 2.2 | 3.4 J | 0.4 U | 0.13 J | 0.19 J | 0.24 J | 0.22 J | 1.4 J | 6.7 |
| Metals | COBALT | MG/KG | 0.023 J | 0.033 J | 0.021 J | 0.088 U | 0.099 U | 0.054 J | 0.081 U | 0.087 U | 0.085 U | 0.02 J | 0.076 J |
| Metals | COPPER | MG/KG | 0.18 J | 0.2 J | 0.2 J | 0.17 J | 0.5 U | 0.2 J | 0.26 J | 0.3 J | 0.28 J | 0.49 | 0.75 |
| Metals | CYANIDE | MG/KG | 0.52 U | 0.48 U | 0.51 U | 0.42 U | 0.37 U | 0.52 U | 0.48 U | 0.53 U | 0.51 U | 0.51 U | 0.5 U |
| Metals | IRON | MG/KG | 13.5 J | 17.7 J | 11.8 J | 26.2 | 19.8 U | 12.1 J | 12.7 J | 17.9 | 9.7 J | 28.4 | 46.3 |
| Metals | LEAD | MG/KG | 0.054 J | 0.096 U | 0.094 | 0.088 U | 0.099 U | 1 | 0.093 J | 0.16 J | 0.09 | 0.17 | 0.12 |
| Metals | MAGNESIUM | MG/KG | 292 | 268 | 260 | 124 | 100 | 175 | 239 | 231 | 250 | 259 J | 303 |
| Metals | MANGANESE | MG/KG | 0.43 | 0.54 | 0.32 | 0.61 J | 0.2 U | 1.8 | 0.63 J | 0.25 J | 0.14 J | 0.29 | 0.82 |
| Metals | MERCURY | MG/KG | 0.071 | 0.019 J | 0.053 | 0.04 U | 0.038 U | 0.043 | 0.036 | 0.018 J | 0.034 UJ | 0.11 | 0.078 J |
| Metals | NICKEL | MG/KG | 1.3 | 1.9 | 1.3 | 2.5 J | 0.2 U | 0.09 J | 0.22 J | 0.17 U | 0.15 J | 0.95 | 3.9 |
| Metals | POTASSIUM | MG/KG | 3710 | 3360 | 3550 | 1130 | 1160 | 1400 | 3410 | 3500 | 3190 | 3430 | 3810 |
| Metals | SELENIUM | MG/KG | 0.19 J | 0.17 J | 0.17 J | 0.1 J | 0.4 U | 0.15 J | 0.13 J | 0.17 J | 0.19 J | 0.31 J | 0.23 J |
| Metals | SILVER | MG/KG | 0.092 U | 0.096 U | 0.092 U | 0.088 U | 0.099 U | 0.07 U | 0.081 U | 0.087 U | 0.085 U | 0.088 U | 0.085 U |
| Metals | SODIUM | MG/KG | 503 | 537 | 504 | 212 | 247 | 1720 | 644 | 690 | 537 | 608 J | 593 |
| Metals | THALLIUM | MG/KG | 0.18 UJ | 0.19 UJ | 0.18 UJ | 0.18 U | 0.2 U | 0.14 UJ | 0.16 UJ | 0.17 UJ | 0.17 UJ | 0.18 UJ | 0.17 UJ |
| Metals | VANADIUM | MG/KG | 0.46 U | 0.48 U | 0.46 U | 0.44 U | 0.5 U | 0.35 U | 0.41 U | 0.43 U | 0.42 U | 0.44 U | 0.42 U |
| Metals | ZINC | MG/KG | 6.8 | 8 | 7.3 | 3.8 | 2.4 | 9.9 | 7.3 | 9 | 13.5 | 12.2 J | 9.6 |
| PEST/PCB | 4,4'-DDD | MG/KG | 0.00034 J | 0.00053 J | 0.00041 J | 0.0013 J | 0.0013 J | 0.0017 | 0.0071 | 0.0065 | 0.042 | 0.0041 J | 0.018 |
| PEST/PCB | 4,4'-DDE | MG/KG | 0.001 | 0.0021 | 0.0013 | 0.003 | 0.0035 | 0.0016 | 0.011 J | 0.01 | 0.063 | 0.011 | 0.03 |
| PEST/PCB | 4,4'-DDT | MG/KG | 0.00031 U | 0.00031 U | 0.00031 U | 0.0012 U | 0.0012 U | 0.00042 U | 0.0003 U | 0.0003 U | 0.00031 U | 0.00025 U | 0.00031 U |
| PEST/PCB | ALDRIN | MG/KG | 0.00031 U | 0.00031 U | 0.00031 U | 0.0012 U | 0.0012 U | 0.00042 U | 0.0003 U | 0.0003 U | 0.00031 U | 0.00025 U | 0.00031 U |
| PEST/PCB | ALPHA-BHC | MG/KG | 0.00031 U | 0.00031 U | 0.00031 U | 0.0012 U | 0.0012 U | 0.00042 U | 0.0003 U | 0.0003 U | 0.00031 U | 0.00025 U | 0.00031 U |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | 0.00031 U | 0.00031 U | 0.00031 U | 0.0012 U | 0.0012 U | 0.00042 U | 0.00072 J | 0.00053 J | 0.0064 J | 0.00025 U | 0.0028 J |
| PEST/PCB | AROCLOR-1016 | MG/KG | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0025 U | 0.0031 U |
| PEST/PCB | AROCLOR-1221 | MG/KG | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0025 U | 0.0031 U |
| PEST/PCB | AROCLOR-1232 | MG/KG | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0025 U | 0.0031 U |
| PEST/PCB | AROCLOR-1242 | MG/KG | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0025 U | 0.0031 U |
| PEST/PCB | AROCLOR-1248 | MG/KG | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0025 U | 0.0031 U |
| PEST/PCB | AROCLOR-1254 | MG/KG | 0.0076 J | 0.0072 J | 0.0088 J | 0.0052 | 0.012 | 0.005 J | 0.026 | 0.022 | 0.13 | 0.073 | 0.063 |
| PEST/PCB | AROCLOR-1260 | MG/KG | 0.0027 J | 0.0028 J | 0.0034 | 0.0048 | 0.0095 | 0.0031 U | 0.03 | 0.026 | 0.066 | 0.054 | 0.02 |
| PEST/PCB | BETA-BHC | MG/KG | 0.00031 U | 0.00031 U | 0.00031 U | 0.0012 U | 0.0012 U | 0.00042 U | 0.0003 U | 0.0003 U | 0.00031 U | 0.00025 U | 0.00031 U |
| PEST/PCB | DELTA-BHC | MG/KG | 0.00031 U | 0.00031 U | 0.00031 U | 0.0012 U | 0.0012 U | 0.00042 U | 0.0003 U | 0.0003 U | 0.00031 U | 0.00025 U | 0.00031 U |
| PEST/PCB | DIELDRIN | MG/KG | 0.00031 U | 0.00031 U | 0.00031 U | 0.0012 U | 0.0012 U | 0.00042 U | 0.0003 U | 0.0003 U | 0.00031 U | 0.00025 U | 0.00031 U |
| PEST/PCB | ENDOSULFAN I | MG/KG | 0.00031 U | 0.00031 U | 0.00031 U | 0.0012 U | 0.0012 U | 0.00042 U | 0.0003 U | 0.0003 U | 0.00031 U | 0.00025 U | 0.00031 U |
| PEST/PCB | ENDOSULFAN II | MG/KG | 0.00031 U | 0.00031 U | 0.00031 U | 0.0012 U | 0.0012 U | 0.00042 U | 0.0003 U | 0.0003 U | 0.00031 U | 0.00025 U | 0.00031 U |
| PEST/PCB | ENDRIN | MG/KG | 0.00047 | 0.00047 J | 0.00034 J | 0.0012 U | 0.00071 J | 0.00043 | 0.0014 J | 0.0014 J | 0.009 J | 0.0017 J | 0.0042 J |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | 0.00031 U | 0.00031 U | 0.00031 U | 0.0012 U | 0.0012 U | 0.00042 U | 0.0003 U | 0.0003 U | 0.00031 U | 0.00025 U | 0.00031 U |
| PEST/PCB | ENDRIN KETONE | MG/KG | 0.00031 U | 0.00031 U | 0.00031 U | 0.0012 U | 0.0012 U | 0.00042 U | 0.0003 U | 0.0003 U | 0.00031 U | 0.00025 U | 0.00031 U |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | 0.00031 U | 0.00031 U | 0.00031 U | 0.0012 U | 0.0012 U | 0.00042 U | 0.0003 U | 0.0003 U | 0.00031 U | 0.00025 U | 0.00031 U |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | 0.00031 U | 0.00031 U | 0.00031 U | 0.0012 U | 0.0012 U | 0.00042 U | 0.001 | 0.00082 | 0.00031 U | 0.00025 U | 0.00031 U |
| PEST/PCB | HEPTACHLOR | MG/KG | 0.00031 U | 0.00031 U | 0.00031 U | 0.0012 U | 0.0012 U | 0.00042 U | 0.0003 U | 0.0003 U | 0.00031 U | 0.00025 U | 0.00031 U |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | 0.00031 U | 0.00031 U | 0.00031 U | 0.0012 U | 0.0012 U | 0.00042 U | 0.0003 U | 0.0003 U | 0.00031 U | 0.00015 J | 0.00031 U |
| PEST/PCB | HEXACHLOROBENZENE | MG/KG | 0.00031 U | 0.00035 J | 0.00031 U | 0.0012 U | 0.0012 U | 0.00074 J | 0.0013 J | 0.0003 J | 0.00073 J | 0.00025 U | 0.00077 J |
| SVOC | 1,1-BIPHENYL | MG/KG | 0.0021 U | 0.002 U | 0.0019 U | 0.0026 U | 0.0024 U | 0.002 U | 0.0019 UJ | 0.002 U | 0.0019 U | 0.0019 U | 0.002 U |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | 0.5 U | 0.5 U | 0.47 U | 0.4 U | 0.4 U | 0.48 U | 0.48 UJ | 0.5 U | 0.5 U | 0.4 U | 0.46 U |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | 0.0021 U | 0.002 UJ | 0.0019 U | 0.0026 U | 0.0024 U | 0.002 UJ | 0.0019 UJ | 0.002 U | 0.00071 J | 0.0019 U | 0.002 U |
| SVOC | 4-CHLOROANILINE | MG/KG | 0.5 U | 0.5 U | 0.47 U | 0.4 U | 0.4 U | 0.48 U | 0.48 U | 0.5 U | 0.5 U | 0.4 U | 0.46 U |
| SVOC | ACENAPHTHENE | MG/KG | 0.0021 U | 0.002 UJ | 0.0019 U | 0.00039 J | 0.00051 J | 0.002 UJ | 0.00035 J | 0.00035 J | 0.0011 J | 0.00077 J | 0.00064 J |
| SVOC | ACENAPHTHYLENE | MG/KG | 0.0021 U | 0.002 UJ | 0.0019 U | 0.0026 U | 0.0024 U | 0.002 UJ | 0.0019 UJ | 0.002 U | 0.0019 UJ | 0.0019 U | 0.002 U |
| SVOC | ACETOPHENONE | MG/KG | 0.059 J | 0.059 J | 0.051 J | 0.8 U | 0.8 U | 0.044 J | 0.055 J | 0.062 J | 0.045 J | 0.077 J | 0.033 J |
| SVOC | ANTHRACENE | MG/KG | 0.0021 UJ | 0.002 UJ | 0.0019 UJ | 0.0026 U | 0.0024 U | 0.002 UJ | 0.0019 UJ | 0.002 U | 0.0019 UJ | 0.0019 U | 0.002 UJ |
| SVOC | BENZALDEHYDE | MG/KG | 1 U | 1 U | 0.96 U | 0.8 U | 0.8 U | 0.98 U | 0.98 U | 1 U | 1 U | 0.8 U | 0.93 U |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.0021 U | 0.002 U | 0.0019 U | 0.0026 U | 0.0024 U | 0.002 U | 0.0019 UJ | 0.002 U | 0.0019 U | 0.0019 U | 0.002 U |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 0.0021 UJ | 0.002 UJ | 0.0019 UJ | 0.0026 U | 0.0024 U | 0.002 UJ | 0.0019 UJ | 0.002 U | 0.0019 UJ | 0.0019 UJ | 0.002 UJ |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.0021 U | 0.002 U | 0.0019 U | 0.0026 U | 0.0024 U | 0.002 U | 0.0019 UJ | 0.002 U | 0.0019 U | 0.0019 U | 0.002 U |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.0021 U | 0.002 U | 0.0019 U | 0.0026 U | 0.0024 U | 0.002 U | 0.0019 UJ | 0.002 U | 0.0019 U | 0.0019 U | 0.002 U |
| SVOC | BENZO[A]PYRENE | MG/KG | 0.0021 U | 0.002 U | 0.0019 U | 0.0026 U | 0.0024 U | 0.002 U | 0.0019 UJ | 0.002 U | 0.0019 U | 0.0019 U | 0.002 U |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | 0.1 U | 0.1 U | 0.096 U | 0.08 U | 0.08 U | 0.098 U | 0.098 U | 0.1 U | 0.1 U | 0.08 U | 0.093 U |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | 1 U | 1 U | 0.95 U | 0.8 U | 0.8 U | 0.98 U | 0.98 U | 1 U | 1 U | 0.8 U | 0.93 U |
| SVOC | BUTYL BENZYL PHTHALATE | MG/KG | 0.5 U | 0.5 U | 0.47 U | 0.4 U | 0.4 U | 0.48 U | 0.48 U | 0.5 U | 0.5 U | 0.4 U | 0.46 U |
| SVOC | CAPROLACTAM | MG/KG | 2.6 U | 2.6 U | 2.4 U | 2 U | 2 U | 2.5 U | 2.5 U | 2.6 U | 2.6 U | 2 U | 2.4 U |
| SVOC | CARBAZOLE | MG/KG | 0.1 U | 0.1 U | 0.096 U | 0.08 U | 0.08 U | 0.098 U | 0.098 U | 0.1 U | 0.1 U | 0.08 U | 0.093 U |
| SVOC | CHRYSENE | MG/KG | 0.0021 U | 0.002 U | 0.0019 U | 0.0026 U | 0.0024 U | 0.002 U | 0.0019 UJ | 0.002 U | 0.0019 U | 0.0019 UJ | 0.002 U |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.0021 U | 0.002 U | 0.0019 U | 0.0026 U | 0.0024 U | 0.002 U | 0.0019 UJ | 0.002 U | 0.0019 U | 0.0019 U | 0.002 U |
| SVOC | DIBENZOFURAN | MG/KG | 0.5 U | 0.5 U | 0.47 U | 0.4 U | 0.4 U | 0.48 U | 0.48 U | 0.5 U | 0.5 U | 0.4 U | 0.46 U |
| SVOC | DIETHYL PHTHALATE | MG/KG | 0.049 J | 0.5 U | 0.47 U | 0.4 U | 0.4 U | 0.066 J | 0.48 U | 0.046 J | 0.055 J | 0.4 U | 0.094 J |
| SVOC | DI-N-BUTYL PHTHALATE | MG/KG | 0.5 U | 0.5 U | 0.47 U | 0.4 U | 0.4 U | 0.48 U | 0.48 U | 0.5 U | 0.5 U | 0.4 U | 0.46 U |
| SVOC | DI-N-OCTYL PHTHALATE | MG/KG | 0.5 U | 0.5 U | 0.47 U | 0.4 U | 0.4 U | 0.48 U | 0.48 U | 0.5 U | 0.5 U | 0.4 U | 0.46 U |
| SVOC | FLUORANTHENE | MG/KG | 0.0021 UJ | 0.002 UJ | 0.0019 UJ | 0.0026 U | 0.0024 U | 0.002 UJ | 0.0019 UJ | 0.002 U | 0.0019 UJ | 0.0019 U | 0.002 UJ |
| SVOC | FLUORENE | MG/KG | 0.0021 UJ | 0.002 UJ | 0.0019 UJ | 0.0026 U | 0.0024 U | 0.002 UJ | 0.0019 UJ | 0.002 U | 0.0019 UJ | 0.0019 UJ | 0.002 UJ |
| SVOC | HEXACHLOROBENZENE | MG/KG | 0.1 U | 0.1 U | 0.096 U | 0.08 U | 0.08 U | 0.098 U | 0.098 U | 0.1 U | 0.1 U | 0.08 U | 0.093 U |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.0021 U | 0.002 U | 0.0019 U | 0.0026 U | 0.0024 U | 0.002 U | 0.0019 UJ | 0.002 U | 0.0019 U | 0.0019 U | 0.002 U |
| SVOC | METHYLPHENOL, 3 & 4 | MG/KG | 0.5 U | 0.5 U | 0.47 U | 0.4 U | 0.4 U | 0.48 U | 0.48 U | 0.5 U | 0.5 U | 0.4 U | 0.46 U |
| SVOC | NAPHTHALENE | MG/KG | 0.0021 U | 0.002 UJ | 0.0019 U | 0.0026 U | 0.0024 U | 0.002 UJ | 0.0019 UJ | 0.002 U | 0.0019 UJ | 0.0019 U | 0.002 U |
| SVOC | PENTACHLOROPHENOL | MG/KG | 2.6 U | 2.6 U | 2.4 U | 2 U | 2 U | 2.5 U | 2.5 U | 2.6 U | 2.6 U | 2 U | 2.4 U |
| SVOC | PHENANTHRENE | MG/KG | 0.0021 U | 0.002 UJ | 0.0019 U | 0.0026 U | 0.0015 J | 0.002 UJ | 0.0019 UJ | 0.002 U | 0.0016 J | 0.0019 UJ | 0.002 U |
| SVOC | PHENOL | MG/KG | 0.5 U | 0.5 U | 0.47 U | 0.4 U | 0.4 U | 0.48 U | 0.48 U | 0.5 U | 0.5 U | 0.4 U | 0.46 U |
| SVOC | PYRENE | MG/KG | 0.0021 U | 0.002 U | 0.0019 U | 0.0026 U | 0.0024 U | 0.002 U | 0.00093 J | 0.002 U | 0.0019 U | 0.0019 U | 0.002 U |
| Wet Chemistry | PERCENT LIPIDS | % | 0.26 U | 0.25 U | 0.24 U | 0.48 | 0.58 | 0.25 U | 0.45 | 0.39 | 1.5 | 1.3 | 0.95 |
| Wet Chemistry | PERCENT SOLIDS | % | 19.6 | 18.7 | 18.8 | 21 | 20.7 | 11.7 | 19.4 | 20.5 | 21.7 | 23.2 | 22.7 |

**Table 4 Kirkwood Lake Fish Sampling Data**

| Group | Analyte | Location | KWCC0006 | KWCC0007 | KWCC0008 | KWCC0008 | KWLB0001 | KWLB0002 | KWLB0002 | KWLB0003 | KWLB0003 | KWLB0004 | KWLB0005 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Sample ID | KWCC0006-TI-AA-R1-0 | KWCC0007-TI-AA-R1-0 | KWCC0008-TI-AA-R1-0 | KWCC0008-TI-AA-R1-1 | KWLB0001-TI-AA-R1-0 | KWLB0002-TI-AA-R1-0 | KWLB0002-TI-AA-R1-1 | KWLB0003-TI-AA-R1-0 | KWLB0003-TI-AA-R1-1 | KWLB0004-TI-AA-R1-0 | KWLB0005-TI-AA-R1-0 |
| | | Sample Date | 9/14/2017 | 9/14/2017 | 9/14/2017 | 9/14/2017 | 9/14/2017 | 9/15/2017 | 9/15/2017 | 9/15/2017 | 9/15/2017 | 9/15/2017 | 9/15/2017 |
| | | Guild | Benthic Omnivore | Benthic Omnivore | Benthic Omnivore | Benthic Omnivore | Sport Fish | Sport Fish | Sport Fish | Sport Fish | Sport Fish | Sport Fish | Sport Fish |
| | | Species | Common carp (CC) | Common carp (CC) | Common carp (CC) | Common carp (CC) | Largemouth bass (LB) | Largemouth bass (LB) | Largemouth bass (LB) | Largemouth bass (LB) | Largemouth bass (LB) | Largemouth bass (LB) | Largemouth bass (LB) |
| | | Skin On/Off | Off | Off | Off | On | Off | On | On | Off | Off | Off | Off |
| | | Units | | | | | | | | | | | |
| Metals | ALUMINUM | MG/KG | 4.3 U | 3.8 U | 5 U | 4 U | 5 U | 4.7 U | 4.5 U | 4.7 U | 4.9 U | 4.7 U | 4.5 U |
| Metals | ANTIMONY | MG/KG | 0.029 J | 0.02 J | 0.2 U | 0.16 U | 0.027 J | 0.036 J | 0.023 J | 0.04 J | 0.031 J | 0.035 J | 0.032 J |
| Metals | ARSENIC | MG/KG | 0.11 J | 0.16 | 0.12 J | 0.13 J | 0.057 J | 0.19 U | 0.18 U | 0.19 U | 0.2 U | 0.19 U | 0.058 J |
| Metals | BARIUM | MG/KG | 0.87 U | 0.16 J | 0.99 U | 0.24 J | 0.99 U | 0.94 U | 1.1 J | 0.93 U | 0.98 U | 0.93 U | 1.2 J |
| Metals | BERYLLIUM | MG/KG | 0.087 U | 0.077 U | 0.099 U | 0.079 U | 0.099 U | 0.094 U | 0.09 U | 0.093 U | 0.098 U | 0.093 U | 0.091 U |
| Metals | CADMIUM | MG/KG | 0.087 U | 0.077 U | 0.099 U | 0.079 U | 0.099 U | 0.094 U | 0.09 U | 0.093 U | 0.098 U | 0.093 U | 0.091 U |
| Metals | CALCIUM | MG/KG | 109 | 229 | 222 | 312 | 166 | 138 J | 571 J | 100 J | 452 J | 96.4 | 170 |
| Metals | CHROMIUM | MG/KG | 0.18 J | 0.31 | 1.1 | 0.24 J | 1.6 | 0.28 J | 0.76 | 4.1 J | 0.19 J | 10.1 | 14 |
| Metals | COBALT | MG/KG | 0.087 U | 0.077 U | 0.015 J | 0.079 U | 0.02 J | 0.094 U | 0.09 U | 0.05 J | 0.098 U | 0.1 | 0.15 |
| Metals | COPPER | MG/KG | 0.26 J | 0.57 | 0.49 J | 0.43 | 0.29 J | 0.16 J | 0.21 J | 0.34 J | 0.25 J | 0.41 J | 0.91 |
| Metals | CYANIDE | MG/KG | 0.48 U | 0.48 U | 0.48 U | 0.51 U | 0.49 U | 0.53 U | 0.49 U | 0.52 U | 0.49 U | 0.51 U | 0.51 U |
| Metals | IRON | MG/KG | 7.2 J | 9.7 J | 19.5 J | 18.5 | 10.4 J | 18.9 U | 18 U | 21.8 | 19.6 U | 49.1 | 67.2 |
| Metals | LEAD | MG/KG | 0.044 J | 0.058 J | 0.13 | 0.17 | 0.045 J | 0.094 U | 0.09 U | 0.093 U | 0.098 U | 0.093 U | 0.091 U |
| Metals | MAGNESIUM | MG/KG | 277 | 272 | 255 | 260 | 299 | 257 | 288 | 269 | 265 | 255 | 286 |
| Metals | MANGANESE | MG/KG | 0.12 J | 0.18 | 0.32 | 0.17 | 0.29 | 0.09 J | 0.12 J | 0.46 | 0.13 J | 1 | 1.3 |
| Metals | MERCURY | MG/KG | 0.032 J | 0.038 UJ | 0.029 J | 0.048 | 0.038 J | 0.043 | 0.049 | 0.16 | 0.15 | 0.028 J | 0.047 |
| Metals | NICKEL | MG/KG | 6 | 0.21 | 0.64 | 0.11 J | 0.98 | 0.19 UJ | 1.2 J | 2.6 J | 0.2 UJ | 6 | 8.7 |
| Metals | POTASSIUM | MG/KG | 3760 | 3400 | 3380 | 3530 | 4040 | 3690 | 3880 | 4060 | 3480 | 3720 | 4030 |
| Metals | SELENIUM | MG/KG | 0.18 J | 0.25 J | 0.15 J | 0.2 J | 0.16 J | 0.16 J | 0.2 J | 0.19 J | 0.18 J | 0.18 J | 0.19 J |
| Metals | SILVER | MG/KG | 0.087 U | 0.077 U | 0.099 U | 0.079 U | 0.099 U | 0.094 U | 0.09 U | 0.093 U | 0.098 U | 0.093 U | 0.091 U |
| Metals | SODIUM | MG/KG | 441 | 529 | 670 | 728 | 468 | 493 | 517 | 512 | 501 | 425 | 637 |
| Metals | THALLIUM | MG/KG | 0.17 UJ | 0.15 UJ | 0.2 UJ | 0.16 UJ | 0.2 UJ | 0.19 UJ | 0.18 UJ | 0.19 UJ | 0.2 UJ | 0.19 UJ | 0.18 UJ |
| Metals | VANADIUM | MG/KG | 0.43 U | 0.38 U | 0.5 U | 0.4 U | 0.5 U | 0.47 U | 0.45 U | 0.47 U | 0.49 U | 0.47 U | 0.45 U |
| Metals | ZINC | MG/KG | 14.7 | 13.7 | 7.1 | 13.2 J | 6.2 | 7.3 | 8.9 | 4.9 | 8 | 5.5 | 6.6 |
| PEST/PCB | 4,4'-DDD | MG/KG | 0.019 | 0.021 | 0.035 | 0.036 | 0.0045 J | 0.00092 J | 0.00098 J | 0.00052 J | 0.0004 J | 0.0011 J | 0.00062 J |
| PEST/PCB | 4,4'-DDE | MG/KG | 0.037 | 0.029 | 0.055 | 0.055 | 0.0078 J | 0.0027 | 0.0028 | 0.0017 | 0.0013 | 0.0026 | 0.0025 |
| PEST/PCB | 4,4'-DDT | MG/KG | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 UJ | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U |
| PEST/PCB | ALDRIN | MG/KG | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 UJ | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U |
| PEST/PCB | ALPHA-BHC | MG/KG | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 UJ | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | 0.0037 J | 0.0048 | 0.0034 J | 0.0035 J | 0.00035 J | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U |
| PEST/PCB | AROCLOR-1016 | MG/KG | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 UJ | 0.0025 U | 0.0025 U | 0.0025 U | 0.0025 U | 0.0025 U | 0.0025 U |
| PEST/PCB | AROCLOR-1221 | MG/KG | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0025 U | 0.0025 U | 0.0025 U | 0.0025 U | 0.0025 U | 0.0025 U |
| PEST/PCB | AROCLOR-1232 | MG/KG | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0025 U | 0.0025 U | 0.0025 U | 0.0025 U | 0.0025 U | 0.0025 U |
| PEST/PCB | AROCLOR-1242 | MG/KG | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0025 U | 0.0025 U | 0.0025 U | 0.0025 U | 0.0025 U | 0.0025 U |
| PEST/PCB | AROCLOR-1248 | MG/KG | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0031 U | 0.0025 U | 0.0025 U | 0.0025 U | 0.0025 U | 0.0025 U | 0.0025 U |
| PEST/PCB | AROCLOR-1254 | MG/KG | 0.094 | 0.13 | 0.13 | 0.16 | 0.027 | 0.014 | 0.016 | 0.011 J | 0.0018 J | 0.007 | 0.0053 |
| PEST/PCB | AROCLOR-1260 | MG/KG | 0.037 | 0.042 | 0.05 | 0.064 | 0.0092 J | 0.011 | 0.013 | 0.0065 | 0.0022 J | 0.0054 | 0.0046 |
| PEST/PCB | BETA-BHC | MG/KG | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 UJ | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U |
| PEST/PCB | DELTA-BHC | MG/KG | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 UJ | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U |
| PEST/PCB | DIELDRIN | MG/KG | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 UJ | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U |
| PEST/PCB | ENDOSULFAN I | MG/KG | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 UJ | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U |
| PEST/PCB | ENDOSULFAN II | MG/KG | 0.00063 J | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 UJ | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U |
| PEST/PCB | ENDRIN | MG/KG | 0.0053 J | 0.004 J | 0.0077 J | 0.0078 J | 0.0012 J | 0.00076 J | 0.00089 J | 0.00068 J | 0.00035 J | 0.00081 J | 0.00082 |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 UJ | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U |
| PEST/PCB | ENDRIN KETONE | MG/KG | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 UJ | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | 0.00031 U | 0.00031 U | 0.00065 J | 0.00084 | 0.00031 UJ | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 UJ | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U |
| PEST/PCB | HEPTACHLOR | MG/KG | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 U | 0.00031 UJ | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | 0.00031 U | 0.00031 U | 0.00031 U | 0.00041 J | 0.00031 UJ | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U |
| PEST/PCB | HEXACHLOROBENZENE | MG/KG | 0.00068 J | 0.00098 | 0.00048 J | 0.00068 J | 0.00031 UJ | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U | 0.00025 U |
| SVOC | 1,1-BIPHENYL | MG/KG | 0.0019 U | 0.002 U | 0.0019 U | 0.0019 U | 0.0018 U | 0.002 U | 0.002 U | 0.002 U | 0.0021 U | 0.0019 U | 0.0019 U |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | 0.5 U | 0.48 U | 0.47 U | 0.5 U | 0.5 UJ | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | 0.0019 UJ | 0.002 U | 0.0019 U | 0.0019 U | 0.0018 U | 0.002 U | 0.00056 J | 0.002 U | 0.0021 U | 0.0019 U | 0.0019 U |
| SVOC | 4-CHLOROANILINE | MG/KG | 0.5 U | 0.48 U | 0.47 U | 0.5 U | 0.5 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| SVOC | ACENAPHTHENE | MG/KG | 0.00099 J | 0.0012 J | 0.00073 J | 0.00068 J | 0.0018 U | 0.00036 J | 0.00043 J | 0.00062 J | 0.00033 J | 0.00042 J | 0.0019 U |
| SVOC | ACENAPHTHYLENE | MG/KG | 0.0019 UJ | 0.002 U | 0.0019 U | 0.0019 U | 0.0018 U | 0.002 U | 0.002 U | 0.002 U | 0.0021 U | 0.0019 U | 0.0019 U |
| SVOC | ACETOPHENONE | MG/KG | 1 U | 0.98 U | 0.053 J | 0.05 J | 1 U | 0.064 J | 0.11 J | 0.083 J | 0.061 J | 0.087 J | 0.11 J |
| SVOC | ANTHRACENE | MG/KG | 0.0019 UJ | 0.002 UJ | 0.0019 UJ | 0.0019 UJ | 0.0018 UJ | 0.002 U | 0.002 U | 0.002 U | 0.0021 U | 0.0019 U | 0.0019 U |
| SVOC | BENZALDEHYDE | MG/KG | 1 U | 0.98 U | 0.96 U | 1 U | 1 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.0019 U | 0.002 U | 0.0019 U | 0.0019 U | 0.0018 U | 0.002 U | 0.002 U | 0.002 U | 0.0021 U | 0.0019 U | 0.0019 U |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 0.0019 UJ | 0.002 UJ | 0.0019 UJ | 0.0019 UJ | 0.0018 UJ | 0.002 UJ | 0.002 UJ | 0.002 UJ | 0.0021 UJ | 0.0019 UJ | 0.0019 UJ |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.0019 U | 0.002 U | 0.0019 U | 0.0019 U | 0.0018 U | 0.002 U | 0.002 U | 0.002 U | 0.0021 U | 0.0019 U | 0.0019 U |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.0019 U | 0.002 U | 0.0019 U | 0.0019 U | 0.0018 U | 0.002 U | 0.002 U | 0.002 U | 0.0021 U | 0.0019 U | 0.0019 U |
| SVOC | BENZO[A]PYRENE | MG/KG | 0.0019 U | 0.002 U | 0.0019 U | 0.0019 U | 0.0018 U | 0.002 U | 0.002 U | 0.002 U | 0.0021 U | 0.0019 U | 0.0019 U |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | 0.1 U | 0.098 U | 0.096 U | 0.1 U | 0.1 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | 1 U | 0.98 U | 0.95 U | 1 U | 1 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U |
| SVOC | BUTYL BENZYL PHTHALATE | MG/KG | 0.5 U | 0.48 U | 0.47 U | 0.5 U | 0.5 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| SVOC | CAPROLACTAM | MG/KG | 2.6 U | 2.5 U | 2.4 U | 2.6 U | 2.6 U | 2 U | 2 U | 2 U | 2 U | 2 U | 2 U |
| SVOC | CARBAZOLE | MG/KG | 0.1 U | 0.098 U | 0.096 U | 0.1 U | 0.1 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U |
| SVOC | CHRYSENE | MG/KG | 0.0019 U | 0.002 U | 0.0019 U | 0.0019 U | 0.0018 U | 0.002 UJ | 0.002 UJ | 0.002 UJ | 0.0021 UJ | 0.0019 UJ | 0.0019 UJ |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.0019 U | 0.002 U | 0.0019 U | 0.0019 U | 0.0018 U | 0.002 U | 0.002 U | 0.002 U | 0.0021 U | 0.0019 U | 0.0019 U |
| SVOC | DIBENZOFURAN | MG/KG | 0.5 U | 0.48 U | 0.47 U | 0.5 U | 0.5 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| SVOC | DIETHYL PHTHALATE | MG/KG | 0.5 U | 0.48 U | 0.47 U | 0.5 U | 0.5 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| SVOC | DI-N-BUTYL PHTHALATE | MG/KG | 0.5 U | 0.48 U | 0.47 U | 0.5 U | 0.5 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| SVOC | DI-N-OCTYL PHTHALATE | MG/KG | 0.5 U | 0.48 U | 0.47 U | 0.5 U | 0.5 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| SVOC | FLUORANTHENE | MG/KG | 0.0019 UJ | 0.002 UJ | 0.0019 UJ | 0.0019 UJ | 0.0018 UJ | 0.002 U | 0.002 U | 0.002 U | 0.0021 U | 0.0019 U | 0.0019 U |
| SVOC | FLUORENE | MG/KG | 0.0019 UJ | 0.002 UJ | 0.0019 UJ | 0.0019 UJ | 0.0018 UJ | 0.002 UJ | 0.002 UJ | 0.002 UJ | 0.0021 UJ | 0.0019 UJ | 0.0019 UJ |
| SVOC | HEXACHLOROBENZENE | MG/KG | 0.1 U | 0.098 U | 0.096 U | 0.1 U | 0.1 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.0019 U | 0.002 U | 0.0019 U | 0.0019 U | 0.0018 U | 0.002 U | 0.002 U | 0.002 U | 0.0021 U | 0.0019 U | 0.0019 U |
| SVOC | METHYLPHENOL, 3 & 4 | MG/KG | 0.5 U | 0.48 U | 0.47 U | 0.5 U | 0.5 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| SVOC | NAPHTHALENE | MG/KG | 0.0019 UJ | 0.002 U | 0.0019 U | 0.0019 U | 0.0018 U | 0.002 U | 0.002 U | 0.002 U | 0.0021 U | 0.0019 U | 0.0019 U |
| SVOC | PENTACHLOROPHENOL | MG/KG | 2.6 U | 2.5 U | 2.4 U | 2.6 U | 2.6 U | 2 U | 2 U | 2 U | 2 U | 2 U | 2 U |
| SVOC | PHENANTHRENE | MG/KG | 0.0019 UJ | 0.0012 J | 0.0019 U | 0.0019 U | 0.0018 U | 0.002 UJ | 0.0018 J | 0.0013 J | 0.0021 UJ | 0.0019 UJ | 0.0019 UJ |
| SVOC | PHENOL | MG/KG | 0.5 U | 0.48 U | 0.47 U | 0.5 U | 0.5 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| SVOC | PYRENE | MG/KG | 0.0019 U | 0.002 U | 0.0019 U | 0.0019 U | 0.0018 U | 0.002 U | 0.002 U | 0.002 U | 0.0021 U | 0.0019 U | 0.0019 U |
| Wet Chemistry | PERCENT LIPIDS | % | 1.4 | 2.4 | 0.99 | 0.8 | 0.3 | 0.46 | 0.25 U | 0.44 | 0.35 | 0.38 | 0.24 |
| Wet Chemistry | PERCENT SOLIDS | % | 21.9 | 23 | 20.3 | 21.4 | 21.2 | 20.8 | 20.5 | 20.8 | 22.3 | 19.8 | 19.7 |

**Table 4 Kirkwood Lake Fish Sampling Data**

| Group | Analyte | Location | KWSF0005 | KWSF0007 | KWSF0009 | KWSF0010 | KWSF0011 |
|---|---|---|---|---|---|---|---|
| | | Sample ID | KWSF0005-TI-AA-R1-0 | KWSF0007-TI-AA-R1-0 | KWSF0009-TI-AA-R1-0 | KWSF0010-TI-AA-R1-0 | KWSF0011-TI-AA-R1-0 |
| | | Sample Date | 10/26/2017 | 10/26/2017 | 10/26/2017 | 10/26/2017 | 10/26/2017 |
| | | Guild | Sport Fish | Sport Fish | Sport Fish | Sport Fish | Sport Fish |
| | | Species | Sunfish (*Lepomis sp.*) | Sunfish (*Lepomis sp.*) | Sunfish (*Lepomis sp.*) | Sunfish (*Lepomis sp.*) | Sunfish (*Lepomis sp.*) |
| | | Skin On/Off | On | On | On | On | On |
| | | Units | | | | | |
| Metals | ALUMINUM | MG/KG | 4.6 U | 4.8 U | 4.8 U | 4.4 U | 4.9 U |
| Metals | ANTIMONY | MG/KG | 0.18 U | 0.026 J | 0.19 U | 0.18 U | 0.2 U |
| Metals | ARSENIC | MG/KG | 0.051 J | 0.058 J | 0.19 U | 0.1 J | 0.11 J |
| Metals | BARIUM | MG/KG | 0.55 J | 0.6 J | 0.21 J | 0.51 J | 2.3 |
| Metals | BERYLLIUM | MG/KG | 0.092 U | 0.096 U | 0.095 U | 0.088 U | 0.098 U |
| Metals | CADMIUM | MG/KG | 0.092 U | 0.096 U | 0.095 U | 0.088 U | 0.098 U |
| Metals | CALCIUM | MG/KG | 1760 | 2050 | 979 | 2330 | 9460 |
| Metals | CHROMIUM | MG/KG | 0.28 J | 0.33 J | 0.38 U | 0.46 | 0.33 J |
| Metals | COBALT | MG/KG | 0.092 U | 0.096 U | 0.095 U | 0.088 U | 0.098 U |
| Metals | COPPER | MG/KG | 0.17 J | 0.17 J | 0.48 U | 0.17 J | 0.17 J |
| Metals | CYANIDE | MG/KG | 0.43 U | 0.36 U | 0.5 U | 0.34 U | 0.38 U |
| Metals | IRON | MG/KG | 18.3 U | 19.2 U | 19 U | 7.4 J | 8.3 J |
| Metals | LEAD | MG/KG | 0.04 J | 0.079 J | 0.095 U | 0.15 | 0.58 |
| Metals | MAGNESIUM | MG/KG | 314 J | 330 | 93.7 | 335 | 456 |
| Metals | MANGANESE | MG/KG | 0.38 | 0.45 | 0.32 J | 0.85 | 3.5 |
| Metals | MERCURY | MG/KG | 0.036 U | 0.036 U | 0.036 U | 0.02 J | 0.019 J |
| Metals | NICKEL | MG/KG | 0.15 J | 0.23 | 0.19 U | 0.35 | 0.26 |
| Metals | POTASSIUM | MG/KG | 3320 | 3620 | 721 | 3640 | 3610 |
| Metals | SELENIUM | MG/KG | 0.24 J | 0.24 J | 0.38 U | 0.23 J | 0.33 J |
| Metals | SILVER | MG/KG | 0.092 U | 0.096 U | 0.095 U | 0.088 U | 0.098 U |
| Metals | SODIUM | MG/KG | 694 | 907 | 169 | 862 | 1040 |
| Metals | THALLIUM | MG/KG | 0.18 U | 0.19 U | 0.19 U | 0.18 U | 0.2 U |
| Metals | VANADIUM | MG/KG | 0.46 U | 0.48 U | 0.48 U | 0.44 U | 0.49 U |
| Metals | ZINC | MG/KG | 12.5 | 12.1 | 5.7 | 16.3 | 14.1 |
| PEST/PCB | 4,4'-DDD | MG/KG | 0.00089 J | 0.0014 | 0.00086 J | 0.00089 J | 0.0012 U |
| PEST/PCB | 4,4'-DDE | MG/KG | 0.0033 | 0.0053 | 0.0041 | 0.0036 | 0.0013 |
| PEST/PCB | 4,4'-DDT | MG/KG | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U |
| PEST/PCB | ALDRIN | MG/KG | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U |
| PEST/PCB | ALPHA-BHC | MG/KG | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U |
| PEST/PCB | ALPHA-CHLORDANE | MG/KG | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U |
| PEST/PCB | AROCLOR-1016 | MG/KG | 0.0025 U | 0.0025 U | 0.0031 U | 0.0025 U | 0.0025 U |
| PEST/PCB | AROCLOR-1221 | MG/KG | 0.0025 U | 0.0025 U | 0.0031 U | 0.0025 U | 0.0025 U |
| PEST/PCB | AROCLOR-1232 | MG/KG | 0.0025 U | 0.0025 U | 0.0031 U | 0.0025 U | 0.0025 U |
| PEST/PCB | AROCLOR-1242 | MG/KG | 0.0025 U | 0.0025 U | 0.0031 U | 0.0025 U | 0.0025 U |
| PEST/PCB | AROCLOR-1248 | MG/KG | 0.0025 U | 0.0025 U | 0.0031 U | 0.0025 U | 0.0025 U |
| PEST/PCB | AROCLOR-1254 | MG/KG | 0.0093 | 0.013 | 0.016 | 0.0047 J | 0.0031 |
| PEST/PCB | AROCLOR-1260 | MG/KG | 0.0086 | 0.011 | 0.014 | 0.004 | 0.0023 J |
| PEST/PCB | BETA-BHC | MG/KG | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U |
| PEST/PCB | DELTA-BHC | MG/KG | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U |
| PEST/PCB | DIELDRIN | MG/KG | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U |
| PEST/PCB | ENDOSULFAN I | MG/KG | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U |
| PEST/PCB | ENDOSULFAN II | MG/KG | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U |
| PEST/PCB | ENDRIN | MG/KG | 0.00067 J | 0.0011 J | 0.00084 J | 0.00086 J | 0.0012 U |
| PEST/PCB | ENDRIN ALDEHYDE | MG/KG | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U |
| PEST/PCB | ENDRIN KETONE | MG/KG | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U |
| PEST/PCB | GAMMA-BHC (LINDANE) | MG/KG | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U |
| PEST/PCB | GAMMA-CHLORDANE | MG/KG | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U |
| PEST/PCB | HEPTACHLOR | MG/KG | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U |
| PEST/PCB | HEPTACHLOR EPOXIDE | MG/KG | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U |
| PEST/PCB | HEXACHLOROBENZENE | MG/KG | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U | 0.0012 U |
| SVOC | 1,1-BIPHENYL | MG/KG | 0.0021 U | 0.002 U | 0.0024 U | 0.0021 U | 0.0021 U |
| SVOC | 2,4-DIMETHYLPHENOL | MG/KG | 0.4 U | 0.4 U | 0.4 U | 0.4 UJ | 0.4 U |
| SVOC | 2-METHYLNAPHTHALENE | MG/KG | 0.0021 U | 0.002 U | 0.0024 U | 0.0021 UJ | 0.0021 U |
| SVOC | 4-CHLOROANILINE | MG/KG | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| SVOC | ACENAPHTHENE | MG/KG | 0.00041 J | 0.00044 J | 0.00046 J | 0.0021 UJ | 0.00031 J |
| SVOC | ACENAPHTHYLENE | MG/KG | 0.0021 U | 0.002 U | 0.0024 U | 0.0021 UJ | 0.0021 U |
| SVOC | ACETOPHENONE | MG/KG | 0.8 U | 0.044 J | 0.8 U | 0.8 U | 0.8 U |
| SVOC | ANTHRACENE | MG/KG | 0.0021 U | 0.002 U | 0.0024 U | 0.0021 UJ | 0.0021 U |
| SVOC | BENZALDEHYDE | MG/KG | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U |
| SVOC | BENZO(A)ANTHRACENE | MG/KG | 0.0021 U | 0.002 U | 0.0024 U | 0.0021 U | 0.0021 U |
| SVOC | BENZO(B)FLUORANTHENE | MG/KG | 0.0021 U | 0.002 U | 0.0024 U | 0.0021 U | 0.0021 U |
| SVOC | BENZO(G,H,I)PERYLENE | MG/KG | 0.0021 U | 0.002 U | 0.0024 U | 0.0021 U | 0.0021 U |
| SVOC | BENZO(K)FLUORANTHENE | MG/KG | 0.0021 U | 0.002 U | 0.0024 U | 0.0021 U | 0.0021 U |
| SVOC | BENZO[A]PYRENE | MG/KG | 0.0021 U | 0.002 U | 0.0024 U | 0.0021 U | 0.0021 U |
| SVOC | BIS(2-CHLOROETHYL)ETHER | MG/KG | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | MG/KG | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U |
| SVOC | BUTYL BENZYL PHTHALATE | MG/KG | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| SVOC | CAPROLACTAM | MG/KG | 2 U | 2 U | 2 U | 2 U | 2 U |
| SVOC | CARBAZOLE | MG/KG | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U |
| SVOC | CHRYSENE | MG/KG | 0.0021 U | 0.002 U | 0.0024 U | 0.0021 U | 0.0021 U |
| SVOC | DIBENZO(A,H)ANTHRACENE | MG/KG | 0.0021 U | 0.002 U | 0.0024 U | 0.0021 U | 0.0021 U |
| SVOC | DIBENZOFURAN | MG/KG | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| SVOC | DIETHYL PHTHALATE | MG/KG | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| SVOC | DI-N-BUTYL PHTHALATE | MG/KG | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| SVOC | DI-N-OCTYL PHTHALATE | MG/KG | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| SVOC | FLUORANTHENE | MG/KG | 0.0021 U | 0.002 U | 0.0024 U | 0.0021 U | 0.0021 U |
| SVOC | FLUORENE | MG/KG | 0.0021 U | 0.002 U | 0.0024 U | 0.0021 UJ | 0.0021 U |
| SVOC | HEXACHLOROBENZENE | MG/KG | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U |
| SVOC | INDENO(1,2,3-CD)PYRENE | MG/KG | 0.0021 U | 0.002 U | 0.0024 U | 0.0021 U | 0.0021 U |
| SVOC | METHYLPHENOL, 3 & 4 | MG/KG | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| SVOC | NAPHTHALENE | MG/KG | 0.0021 U | 0.002 U | 0.0024 U | 0.0021 UJ | 0.0021 U |
| SVOC | PENTACHLOROPHENOL | MG/KG | 2 U | 2 U | 2 U | 2 U | 2 U |
| SVOC | PHENANTHRENE | MG/KG | 0.0021 U | 0.002 U | 0.0024 U | 0.0021 UJ | 0.0021 U |
| SVOC | PHENOL | MG/KG | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| SVOC | PYRENE | MG/KG | 0.0021 U | 0.002 U | 0.0024 U | 0.0021 U | 0.0021 U |
| Wet Chemistry | PERCENT LIPIDS | % | 0.48 | 0.53 | 0.61 | 0.27 U | 0.42 |
| Wet Chemistry | PERCENT SOLIDS | % | 21.4 | 21.5 | 20.8 | 20.3 | 20.4 |

Notes:
U: Not Detected; J: Estimated; R: Rejected.

# Appendix C-1

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## Risk Calculations for 5% Chromium Analysis

## Appendix C-1 Table Index

| Table | Title | Media | Exposure Area |
|---|---|---|---|
| 0 | Site Risk Assessment Identification Information | All | |
| 1 | Selection of Exposure Pathways | All | All Areas |
| 2.1 | Occurrence, Distribution, and Selection of the Chemicals of Potential Concern | Soil (0-2 ft bgs) | BWL |
| 2.2 | Occurrence, Distribution, and Selection of the Chemicals of Potential Concern | Soil (0-2 ft bgs) | HC |
| 2.3 | Occurrence, Distribution, and Selection of the Chemicals of Potential Concern | Soil (0-2 ft bgs) | KWL |
| 2.4 | Occurrence, Distribution, and Selection of the Chemicals of Potential Concern | Sediment (0-0.5 ft bgs) | SL |
| 2.5 | Occurrence, Distribution, and Selection of the Chemicals of Potential Concern | Sediment (0-0.5 ft bgs) | BWL |
| 2.6 | Occurrence, Distribution, and Selection of the Chemicals of Potential Concern | Sediment (0-0.5 ft bgs) | HC |
| 2.7 | Occurrence, Distribution, and Selection of the Chemicals of Potential Concern | Sediment (0-0.5 ft bgs) | KWL |
| 2.8 | Occurrence, Distribution, and Selection of the Chemicals of Potential Concern | Surface Water | SL |
| 2.9 | Occurrence, Distribution, and Selection of the Chemicals of Potential Concern | Surface Water | BWL |
| 2.10 | Occurrence, Distribution, and Selection of the Chemicals of Potential Concern | Surface Water | HC |
| 2.11 | Occurrence, Distribution, and Selection of the Chemicals of Potential Concern | Surface Water | KWL |
| 2.12 | Occurrence, Distribution, and Selection of the Chemicals of Potential Concern | Fish | KWL |
| 3.1 | Exposure Point Concentrations – Reasonable Maximum Exposure | Soil (0-2 ft bgs) | HC, BWL, KWL |
| 3.2 | Exposure Point Concentrations – Reasonable Maximum Exposure | Soil Particulates/Volatiles in Air | HC, BWL, KWL |
| 3.3 | Exposure Point Concentrations – Reasonable Maximum Exposure | Sediment (0-0.5 ft bgs) | All Areas |
| 3.4 | Exposure Point Concentrations – Reasonable Maximum Exposure | Soil and Sediment for Lead Models | All Areas |
| 3.5 | Exposure Point Concentrations – Reasonable Maximum Exposure | Surface Water for Lead Models | BWL, KWL |
| 3.6 | Exposure Point Concentrations – Reasonable Maximum Exposure | Surface Water | All Areas |
| 3.7 | Exposure Point Concentrations – Reasonable Maximum Exposure | Fish | KWL |
| 4.1 | Values Used for Daily Intake Calculations – Reasonable Maximum Exposure | Soil | BWL, HC, KWL |
| 4.2 | Values Used for Daily Intake Calculations – Reasonable Maximum Exposure | Sediment | All Areas |
| 4.3 | Values Used for Daily Intake Calculations – Reasonable Maximum Exposure | Surface Water | All Areas |
| 4.4 | Values Used for Daily Intake Calculations – Reasonable Maximum Exposure | Fish | KWL |
| 4.5 | Age-adjusted Exposure Factors for MMOA Chemicals | All | All Areas |
| 4.6 | Values Used for Daily Absorbed Dose Calculations - Recreational Exposure to Surface Water | Surface Water | All Areas |
| 5.1 | Non-cancer Toxicity Data – Oral/Dermal | All | All Areas |
| 5.2 | Non-cancer Toxicity Data – Inhalation | All | All Areas |
| 6.1 | Cancer Toxicity Data – Oral/Dermal | All | All Areas |
| 6.2 | Cancer Toxicity Data – Inhalation | All | All Areas |
| 7.1 | Calculation of Chemical Cancer Risks for Recreator (Adult) | All | All Areas |
| 7.2 | Calculation of Chemical Cancer Risks for Recreator (Adolescent) | All | All Areas |
| 7.3 | Calculation of Chemical Cancer Risks for Recreator (Child) | All | All Areas |
| 7.4 | Calculation of Chemical Cancer Risks for Swimmer (Adult) | SD, SW | SL, BWL, KWL |
| 7.5 | Calculation of Chemical Cancer Risks for Swimmer (Adolescent) | SD, SW | SL, BWL, KWL |
| 7.6 | Calculation of Chemical Cancer Risks for Swimmer (Child) | SD, SW | SL, BWL, KWL |
| 7.7 | Calculation of Chemical Cancer Risks for Angler (Adult) | Fish | KWL |
| 7.8 | Calculation of Chemical Cancer Risks for Angler (Adolescent) | Fish | KWL |
| 7.9 | Calculation of Chemical Cancer Risks for Angler (Child) | Fish | KWL |
| 7.10 | Calculation of Chemical Non-cancer Hazards for Recreator (Adult) | All | All Areas |
| 7.11 | Calculation of Chemical Non-cancer Hazards for Recreator (Adolescent) | All | All Areas |
| 7.12 | Calculation of Chemical Non-cancer Hazards for Recreator (Child) | All | All Areas |
| 7.13 | Calculation of Chemical Non-cancer Hazards for Swimmer (Adult) | SD, SW | SL, BWL, KWL |
| 7.14 | Calculation of Chemical Non-cancer Hazards for Swimmer (Adolescent) | SD, SW | SL, BWL, KWL |
| 7.15 | Calculation of Chemical Non-cancer Hazards for Swimmer (Child) | SD, SW | SL, BWL, KWL |
| 7.16 | Calculation of Chemical Non-cancer Hazards for Angler (Adult) | Fish | KWL |
| 7.17 | Calculation of Chemical Non-cancer Hazards for Angler (Adolescent) | Fish | KWL |
| 7.18 | Calculation of Chemical Non-cancer Hazards for Angler (Child) | Fish | KWL |
| 9.1 | Chemical Cancer Risks and Non-cancer Hazards – Recreator - Adult | All | All Areas |
| 9.2 | Chemical Cancer Risks and Non-cancer Hazards – Recreator - Adolescent | All | All Areas |
| 9.3 | Chemical Cancer Risks and Non-cancer Hazards – Recreator - Child | All | All Areas |
| 9.4 | Chemical Cancer Risks and Non-cancer Hazards – Swimmer - Adult | SD, SW | SL, BWL, KWL |
| 9.5 | Chemical Cancer Risks and Non-cancer Hazards – Swimmer - Adolescent | SD, SW | SL, BWL, KWL |
| 9.6 | Chemical Cancer Risks and Non-cancer Hazards – Swimmer - Child | SD, SW | SL, BWL, KWL |
| 9.7 | Chemical Cancer Risks and Non-cancer Hazards – Angler - Adult | Fish | KWL |
| 9.8 | Chemical Cancer Risks and Non-cancer Hazards – Angler - Adolescent | Fish | KWL |
| 9.9 | Chemical Cancer Risks and Non-cancer Hazards – Angler - Child | Fish | KWL |
| 10.1 | Risk Assessment Summary – Reasonable Maximum Exposure (Recreator - Adult) | All | All Areas |
| 10.2 | Risk Assessment Summary – Reasonable Maximum Exposure (Recreator - Adolescent) | All | All Areas |
| 10.3 | Risk Assessment Summary – Reasonable Maximum Exposure (Recreator - Child) | All | All Areas |
| 10.4 | Risk Assessment Summary – Reasonable Maximum Exposure (Swimmer - Adult) | SD, SW | SL, BWL, KWL |
| 10.5 | Risk Assessment Summary – Reasonable Maximum Exposure (Swimmer - Adolescent) | SD, SW | SL, BWL, KWL |
| 10.6 | Risk Assessment Summary – Reasonable Maximum Exposure (Swimmer - Child) | SD, SW | SL, BWL, KWL |
| 10.7 | Risk Assessment Summary – Reasonable Maximum Exposure (Angler - Adult) | Fish | KWL |
| 10.8 | Risk Assessment Summary – Reasonable Maximum Exposure (Angler - Adolescent) | Fish | KWL |
| 10.9 | Risk Assessment Summary – Reasonable Maximum Exposure (Angler - Child) | Fish | KWL |

| Table | Title | Media | Exposure Area |
|---|---|---|---|
| 11 | Summary of Total Cancer Risks and Non-cancer Hazards by Exposure Area | All | All Areas |
| 12 | Risk Summary Detail | All | All Areas |
| 13 | Risk Summary Detail by Media | All | All Areas |
| 14.1 | Cancer Risk and Percentage Contribution by Medium for Each Receptor and Exposure Area | All | All Areas |
| 14.2 | Non-cancer Hazard and Percentage Contribution by Medium for Each Receptor and Exposure Area | All | All Areas |

| Exposure Areas |
|---|
| SL – Silver Lake |
| BWL – Bridgewood Lake |
| HC – Lower and Middle Hilliards Creek |
| KWL – Kirkwood Lake |

**Table 0**
**Site Risk Assessment Identification Information**
**Sherwin-Williams/Hilliards Creek Site**

| | |
|---|---|
| Site Name/OU: | Sherwin-Williams/Hilliards Creek Site, Waterbodies |
| Region: | 2 |
| EPA ID Number: | EPA ID# NJD980417976 |
| State: | NJ |
| Status: | PRP-Lead Remedial Investigation |
| Federal Facility (Y/N): | N |
| EPA Project Manager: | Julie Nace |
| EPA Risk Assessor: | Urszula Filipowicz |
| Prepared by (Organization): | Gradient |
| Prepared for (Organization): | The Sherwin-Williams Company |
| Document Title: | Human Health Risk Assessment, Waterbodies |
| Document Date: | 08/16/18 |
| Probabilistic Risk Assessment (Y/N): | N |
| Comments: | |

**Table 1**
**Selection of Exposure Pathways**

| Scenario Timeframe | Medium | Exposure Medium | Exposure Point | Receptor Population | Receptor Age | Exposure Route | Type of Analysis | Rationale for Selection or Exclusion of Exposure Pathway |
|---|---|---|---|---|---|---|---|---|
| Current/Future | Soil | Soil (0-2 feet) | BWL<br>HC<br>KWL | Recreator | Adult | Ingestion<br>Dermal<br>Inhalation | Quantitative | Exposure to soil while visiting site |
| | | | | | Adolescent | Ingestion<br>Dermal<br>Inhalation | Quantitative | Exposure to soil while visiting site |
| | | | | | Child | Ingestion<br>Dermal<br>Inhalation | Quantitative | Exposure to soil while visiting site |
| Current/Future | Sediment | Sediment (0-0.5 feet) | SL<br>BWL<br>HC<br>KWL | Recreator | Adult | Ingestion<br>Dermal | Quantitative | Exposure to sediment while wading |
| | | | | | Adolescent | Ingestion<br>Dermal | Quantitative | Exposure to sediment while wading |
| | | | | | Child | Ingestion<br>Dermal | Quantitative | Exposure to sediment while wading |
| Current/Future | Surface Water | Surface Water | SL<br>BWL<br>HC<br>KWL | Recreator | Adult | Dermal | Quantitative | Exposure to surface water while wading |
| | | | | | Adolescent | Dermal | Quantitative | Exposure to surface water while wading |
| | | | | | Child | Dermal | Quantitative | Exposure to surface water while wading |
| Future | Sediment | Sediment (0-0.5 feet) | SL<br>BWL<br>KWL | Swimmer | Adult | Ingestion<br>Dermal | Quantitative | Exposure to sediment while swimming |
| | | | | | Adolescent | Ingestion<br>Dermal | Quantitative | Exposure to sediment while swimming |
| | | | | | Child | Ingestion<br>Dermal | Quantitative | Exposure to sediment while swimming |
| Future | Surface Water | Surface Water | SL<br>BWL<br>KWL | Swimmer | Adult | Ingestion<br>Dermal | Quantitative | Exposure to surface water while swimming |
| | | | | | Adolescent | Ingestion<br>Dermal | Quantitative | Exposure to surface water while swimming |
| | | | | | Child | Ingestion<br>Dermal | Quantitative | Exposure to surface water while swimming |
| Current/Future | Fish | Fish | KWL | Angler | Adult | Ingestion | Quantitative | Consumption of fish caught from lake |
| | | | | | Adolescent | Ingestion | Quantitative | Consumption of fish caught from lake |
| | | | | | Child | Ingestion | Quantitative | Consumption of fish caught from lake |

Notes:

Exposure Areas:

BWL – Bridgewood Lake.
KWL – Kirkwood Lake.
HC – Hilliards Creek.
SL – Silver Lake.

**Table 2.1**
**Occurrence, Distribution, and Selection of Chemicals of Potential Concern**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Soil (0-2 ft bgs) |
| Exposure Medium: | Soil from Bridgewood Lake |

| Exposure Point | Chemical Group | CAS Number | Chemical | Minimum Detected Concentration (Qualifier) (1) | Maximum Detected Concentration (Qualifier) (1) | Units | Location of Maximum Concentration | Detection Frequency | Range of Detection Limits | Concentration Used for Screening (2) | Background Value (3) | Screening Criteria (4) | Criteria Basis (4) | Exceeds Crit | COPC Flag (Y/N) | Rationale for Selection or Deletion (5) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BWL | METALS | 7429-90-5 | ALUMINUM | 394 | 9480(J) | MG/KG | BWSB0015 | 57/57 | 3.9-135 | 9480 | 15300 | 7700 | EPA RSL (n) | 6 | Yes | ASL |
| BWL | METALS | 7440-36-0 | ANTIMONY | 0.67(J) | 13.3(J) | MG/KG | BWSB0053 | 10/57 | 0.52-37.5 | 13.3 | 3.4 | 3.1 | EPA RSL (n, Antimony (metallic)) | 2 | Yes | ASL |
| BWL | METALS | 7440-38-2 | ARSENIC | 0.6(J) | 1110(J) | MG/KG | BWSB0016 | 49/57 | 0.4-6.7 | 1110 | 194 | 0.68 | EPA RSL (c) | 48 | Yes | ASL |
| BWL | METALS | 7440-39-3 | BARIUM | 2.2(J) | 542 | MG/KG | BWSB0042 | 57/57 | 0.12-135 | 542 | 287 | 1500 | EPA RSL (n) | 0 | No | BSL |
| BWL | METALS | 7440-41-7 | BERYLLIUM | 0.015(J) | 1.6(J) | MG/KG | BWSB0053 | 33/57 | 0.02-3.4 | 1.6 | 1.035 | 16 | EPA RSL (n) | 0 | No | BSL |
| BWL | METALS | 7440-43-9 | CADMIUM | 0.068(J) | 18.1(J) | MG/KG | BWSB0016 | 21/57 | 0.04-3.4 | 18.1 | 3.7 | 7.1 | EPA RSL (n, Cadmium (Diet)) | 1 | Yes | ASL |
| BWL | METALS | 7440-70-2 | CALCIUM | 20.4(J) | 9070(J) | MG/KG | BWSB0054 | 57/57 | 3.4-3370 | 9070 | 7600 | | EN | | No | EN |
| BWL | METALS | 7440-47-3 | CHROMIUM | 0.935(J) | 280(J) | MG/KG | BWSB0016 | 54/54 | 0.17-6.7 | 280 | 249 | 0.3 | EPA RSL (c, Chromium(VI)) | 54 | Yes | ASL |
| BWL | METALS | 7440-48-4 | COBALT | 0.21(J) | 4.8(J) | MG/KG | BWSB0016 | 24/57 | 0.19-33.7 | 4.8 | 7.75 | 2.3 | EPA RSL (n) | 7 | Yes | ASL |
| BWL | METALS | 7440-50-8 | COPPER | 0.715(J) | 248(J) | MG/KG | BWSB0016 | 54/54 | 0.72-16.9 | 248 | 72.5 | 310 | EPA RSL (n) | 0 | No | BSL |
| BWL | METALS | 57-12-5 | CYANIDE | 0.055(J) | 4.3(J) | MG/KG | BWSB0016 | 20/53 | 0.025-1.7 | 4.3 | 58.4 | 2.3 | EPA RSL (n, Cyanide (CN-)) | 3 | Yes | ASL |
| BWL | METALS | 7439-89-6 | IRON | 344.5 | 26400 | MG/KG | BWSB0042 | 48/48 | 3.4-25.4 | 26400 | 50400 | 5500 | EPA RSL (n) | 14 | Yes | ASL |
| BWL | METALS | 7439-92-1 | LEAD | 3.8 | 3310(J) | MG/KG | BWSB0016 | 57/57 | 0.38-43.9 | 3310 | 178 | 400 | EPA RSL (L, Lead and Compounds) | 7 | Yes | ASL |
| BWL | METALS | 7439-95-4 | MAGNESIUM | 15.775(J) | 608(J) | MG/KG | BWSB0057 | 57/57 | 3.6-3370 | 608 | 926 | | EN | | No | EN |
| BWL | METALS | 7439-96-5 | MANGANESE | 2.3(J) | 41.8(J) | MG/KG | BWSB0016 | 57/57 | 0.063-10.1 | 41.8 | 316 | 180 | EPA RSL (n, Manganese (Non-diet)) | 0 | No | BSL |
| BWL | METALS | 7439-97-6 | MERCURY | 0.022(J) | 0.74(J) | MG/KG | BWSB0057 | 23/57 | 0.04-0.34 | 0.74 | 0.45 | 2.3 | EPA RSL (n, Mercuric Chloride (and other Mercury salts)) | 0 | No | BSL |
| BWL | METALS | 7440-02-0 | NICKEL | 0.25(J) | 14.9(J) | MG/KG | BWSB0053 | 54/57 | 0.14-27 | 14.9 | 12.55 | 150 | EPA RSL (n, Nickel Soluble Salts) | 0 | No | BSL |
| BWL | METALS | 7440-09-7 | POTASSIUM | 15.775(J) | 400(J) | MG/KG | BWSB0057 | 52/57 | 7.6-3370 | 400 | 467 | | EN | | No | EN |
| BWL | METALS | 7782-49-2 | SELENIUM | 0.57(J) | 3.6(J) | MG/KG | BWSB0016 | 8/57 | 0.47-7.7 | 3.6 | | 39 | EPA RSL (n) | 0 | No | BSL |
| BWL | METALS | 7440-22-4 | SILVER | 0.068(J) | 0.19(J) | MG/KG | BWSB0013 | 3/57 | 0.062-5.8 | 0.19 | 0.48 | 39 | EPA RSL (n) | 0 | No | BSL |
| BWL | METALS | 7440-23-5 | SODIUM | 11.1(J) | 1340(J) | MG/KG | BWSB0016 | 18/57 | 22-3370 | 1340 | 257 | | EN | | No | EN |
| BWL | METALS | 7440-28-0 | THALLIUM | 0.73(J) | 2.3(J) | MG/KG | BWSB0015 | 8/57 | 0.37-6.7 | 2.3 | 1.2 | 0.078 | EPA RSL (n, Thallium (Soluble Salts)) | 8 | Yes | ASL |
| BWL | METALS | 7440-62-2 | VANADIUM | 1.35(J) | 39.6(J) | MG/KG | BWSB0057 | 57/57 | 0.1-33.7 | 39.6 | 39.6 | 39 | EPA RSL (n, Vanadium and Compounds) | 1 | Yes | ASL |
| BWL | METALS | 7440-66-6 | ZINC | 2.05(J) | 533(JD) | MG/KG | BWSB0017; BWSB0057 | 53/53 | 0.29-263 | 533 | 208 | 2300 | EPA RSL (n) | 0 | No | BSL |
| BWL | PEST/PCB | 72-54-8 | 4,4'-DDD | 0.024 | 0.039(J) | MG/KG | BWSB0015 | 2/20 | 0.0036-0.011 | 0.039 | 0.0013 | 0.19 | EPA RSL (n) | 0 | No | BSL |
| BWL | PEST/PCB | 72-55-9 | 4,4'-DDE | 0.0051(J) | 0.01(J) | MG/KG | BWSB0015 | 2/20 | 0.0036-0.011 | 0.01 | 0.0061 | 2 | EPA RSL (c) | 0 | No | BSL |
| BWL | PEST/PCB | 50-29-3 | 4,4'-DDT | 0.0069(J) | 0.0069(J) | MG/KG | BWSB0015 | 1/20 | 0.0036-0.011 | 0.0069 | 0.0091 | 1.9 | EPA RSL (c) | 0 | No | BSL |
| BWL | PEST/PCB | 11097-69-1 | AROCLOR-1254 | 0.082(J) | 0.082(J) | MG/KG | BWSB0015 | 1/20 | 0.036-0.11 | 0.082 | | 0.12 | EPA RSL (n) | 0 | No | BSL |
| BWL | PEST/PCB | 11096-82-5 | AROCLOR-1260 | 0.027(J) | 0.027(J) | MG/KG | BWSB0017 | 1/20 | 0.036-0.11 | 0.027 | 0.022 | 0.12 | EPA RSL (n, Aroclor 1254) | 0 | No | BSL |
| BWL | SVOC | 56-55-3 | BENZO(A)ANTHRACENE | 0.012(J) | 0.2(J) | MG/KG | BWSB0015 | 4/20 | 0.36-1.1 | 0.2 | 21 | 1.1 | EPA RSL (c) | 0 | No | BSL |
| BWL | SVOC | 50-32-8 | BENZO(A)PYRENE | 0.018(J) | 0.23(J) | MG/KG | BWSB0015 | 6/20 | 0.36-1.1 | 0.23 | 17 | 0.11 | EPA RSL (c) | 2 | Yes | ASL |
| BWL | SVOC | 205-99-2 | BENZO(B)FLUORANTHENE | 0.015(J) | 0.32(J) | MG/KG | BWSB0015 | 8/20 | 0.36-1.1 | 0.32 | 18 | 1.1 | EPA RSL (c) | 0 | No | BSL |
| BWL | SVOC | 191-24-2 | BENZO(G,H,I)PERYLENE | 0.17(J) | 0.17(J) | MG/KG | BWSB0015 | 1/20 | 0.36-1.1 | 0.17 | 12 | 180 | EPA RSL (n, Pyrene) | 0 | No | BSL |
| BWL | SVOC | 207-08-9 | BENZO(K)FLUORANTHENE | 0.016(J) | 0.1(J) | MG/KG | BWSB0015 | 6/20 | 0.36-1.1 | 0.1 | 17 | 11 | EPA RSL (c) | 0 | No | BSL |
| BWL | SVOC | 117-81-7 | BIS(2-ETHYLHEXYL) PHTHALATE | 0.12(J) | 0.12(J) | MG/KG | BWSB0016 | 1/20 | 0.36-1.1 | 0.12 | | 35 | NJ RDCSRS (c) | 0 | No | BSL |
| BWL | SVOC | 105-60-2 | CAPROLACTAM | 0.052(J) | 0.12(J) | MG/KG | BWSB0016 | 2/20 | 0.36-1.1 | 0.12 | | 3100 | EPA RSL (n) | 0 | No | BSL |
| BWL | SVOC | 218-01-9 | CHRYSENE | 0.026(J) | 0.27(J) | MG/KG | BWSB0015 | 6/20 | 0.36-1.1 | 0.27 | 22 | 110 | EPA RSL (c) | 0 | No | BSL |
| BWL | SVOC | 206-44-0 | FLUORANTHENE | 0.017(J) | 0.38(J) | MG/KG | BWSB0015 | 9/20 | 0.36-1.1 | 0.38 | 44 | 240 | EPA RSL (n) | 0 | No | BSL |
| BWL | SVOC | 193-39-5 | INDENO(1,2,3-CD)PYRENE | 0.022(J) | 0.16(J) | MG/KG | BWSB0015 | 2/20 | 0.36-1.1 | 0.16 | 12 | 1.1 | EPA RSL (c) | 0 | No | BSL |
| BWL | SVOC | 87-86-5 | PENTACHLOROPHENOL | 0.25(J) | 0.53(J) | MG/KG | BWSB0018 | 2/20 | 0.88-2.8 | 0.53 | | 0.9 | NJ RDCSRS (c) | 0 | No | BSL |
| BWL | SVOC | 85-01-8 | PHENANTHRENE | 0.012(J) | 0.2(J) | MG/KG | BWSB0015 | 4/20 | 0.36-1.1 | 0.2 | 32 | 1800 | EPA RSL (n, Anthracene) | 0 | No | BSL |
| BWL | SVOC | 129-00-0 | PYRENE | 0.024(J) | 0.37(J) | MG/KG | BWSB0015 | 9/20 | 0.36-1.1 | 0.37 | 45 | 180 | EPA RSL (n) | 0 | No | BSL |
| BWL | VOC | 75-35-4 | 1,1-DICHLOROETHENE | 0.001(J) | 0.001(J) | MG/KG | BWSB0003 | 1/8 | 0.0096-0.012 | 0.001 | | 11 | NJ RDCSRS (n) | 0 | No | BSL |
| BWL | VOC | 67-64-1 | ACETONE | 0.012 | 0.012 | MG/KG | BWSB0002 | 1/8 | 0.0096-0.012 | 0.012 | 1.2 | 6100 | EPA RSL (n) | 0 | No | BSL |

Notes:

Only analytes detected in at least one sample are presented.

(1) J – Estimated. + – Value is the average of a parent sample and a field duplicate sample. B – Analyte was detected in an associated blank sample.

(2) The maximum detected concentration was used for the screening.

(3) Maximum detected concentrations from project background locations.

(4) All compounds were screened against the lower of the EPA (2017e) Regional Screening Level (RSL) for residential soil (THQ = 0.1; Target Cancer Risk = $10^{-6}$) and New Jersey Residential Direct Contact Soil Remediation Standards (NJ RDCSRS) (NJDEP, 2017).

(n) – Non-cancer. (Surrogate/form) – Surrogate/chemical form used in the absence of chemical-specific screening value.

(c) – Cancer.

(L) – Based on blood lead modeling.

(5) Rationale codes:

Selection reason: ASL – Above screening level.

Deletion reason: BSL – Below screening level.

EN – Essential human nutrient.

LDF – Low detection frequency (<5%).

**Table 2.2**
**Occurrence, Distribution, and Selection of Chemicals of Potential Concern**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Soil (0-2 ft bgs) |
| Exposure Medium: | Soil from Hilliards Creek |

| Exposure Point | Chemical Group | CAS Number | Chemical | Minimum Detected Concentration (Qualifier) (1) | Maximum Detected Concentration (Qualifier) (1) | Units | Location of Maximum Concentration | Detection Frequency | Range of Detection Limits | Concentration Used for Screening (2) | Background Value (3) | Screening Criteria (4) | Criteria Basis (4) | Exceeds Crit | COPC Flag (Y/N) | Rationale for Selection or Deletion (5) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HC | METALS | 7429-90-5 | ALUMINUM | 102 | 52100(J) | MG/KG | HCSB0056 | 279/279 | 0.37-219 | 52100 | 15300 | 7700 | EPA RSL (n) | 108 | Yes | ASL |
| HC | METALS | 7440-36-0 | ANTIMONY | 0.4975(J) | 207.5(J+) | MG/KG | HCSB0283 | 143/279 | 0.385-59.1 | 207.5 | 3.4 | 3.1 | EPA RSL (n, Antimony (metallic)) | 60 | Yes | ASL |
| HC | METALS | 7440-38-2 | ARSENIC | 0.5(J) | 4880(J) | MG/KG | HCSB0232 | 265/277 | 0.335-34.7 | 4880 | 194 | 0.68 | EPA RSL (c) | 263 | Yes | ASL |
| HC | METALS | 7440-39-3 | BARIUM | 2.2(J) | 22600(J) | MG/KG | HCSB0233 | 279/279 | 0.02-365 | 22600 | 287 | 1500 | EPA RSL (n) | 34 | Yes | ASL |
| HC | METALS | 7440-41-7 | BERYLLIUM | 0.02(J) | 3.5(J) | MG/KG | HCSB0056 | 247/279 | 0.01-5.5 | 3.5 | 1.035 | 16 | EPA RSL (n) | 0 | No | BSL |
| HC | METALS | 7440-43-9 | CADMIUM | 0.03(J) | 27.5(J) | MG/KG | HCSB0375 | 208/279 | 0.02-5.5 | 27.5 | 3.7 | 7.1 | EPA RSL (n, Cadmium (Diet)) | 12 | Yes | ASL |
| HC | METALS | 7440-70-2 | CALCIUM | 17.1(J) | 19600(J) | MG/KG | HCSB0064 | 276/276 | 0.37-5480 | 19600 | 7600 | | EN | | No | EN |
| HC | METALS | 7440-47-3 | CHROMIUM | 0.53(J) | 10100(J) | MG/KG | HCSB0374 | 279/279 | 0.055-45.5 | 10100 | 249 | 0.3 | EPA RSL (c, Chromium(VI)) | 279 | Yes | ASL |
| HC | METALS | 7440-48-4 | COBALT | 0.0725(J) | 47.9(J) | MG/KG | HCSB0021 | 210/279 | 0.035-54.8 | 47.9 | 7.75 | 2.3 | EPA RSL (n) | 139 | Yes | ASL |
| HC | METALS | 7440-50-8 | COPPER | 0.26(J) | 1700(J) | MG/KG | HCSB0344 | 268/271 | 0.07-27.4 | 1700 | 72.5 | 310 | EPA RSL (n) | 9 | Yes | ASL |
| HC | METALS | 57-12-5 | CYANIDE | 0.08(J) | 495(J) | MG/KG | HCSB0374 | 152/279 | 0.019-16.5 | 495 | 58.4 | 2.3 | EPA RSL (n, Cyanide (CN-)) | 122 | Yes | ASL |
| HC | METALS | 7439-89-6 | IRON | 129 | 194000(J) | MG/KG | HCSB0060 | 279/279 | 0.37-110 | 194000 | 50400 | 5500 | EPA RSL (n) | 177 | Yes | ASL |
| HC | METALS | 7439-92-1 | LEAD | 2.3 | 114000(J) | MG/KG | HCSB0374 | 262/262 | 0.14-54.8 | 114000 | 178 | 400 | EPA RSL (L, Lead and Compounds) | 130 | Yes | ASL |
| HC | METALS | 7439-95-4 | MAGNESIUM | 8.2(J) | 2220(J) | MG/KG | HCSB0064 | 279/279 | 0.37-5480 | 2220 | 926 | | EN | | No | EN |
| HC | METALS | 7439-96-5 | MANGANESE | 1.1(J) | 3910(J) | MG/KG | HCSB0061 | 279/279 | 0.02-16.4 | 3910 | 316 | 180 | EPA RSL (n, Manganese (Non-diet)) | 86 | Yes | ASL |
| HC | METALS | 7439-97-6 | MERCURY | 0.00975(J) | 9.3(J) | MG/KG | HCSB0344 | 211/279 | 0.0079-0.476 | 9.3 | 0.45 | 2.3 | EPA RSL (n, Mercuric Chloride (and other Mercury salts)) | 11 | Yes | ASL |
| HC | METALS | 7440-02-0 | NICKEL | 0.17(J) | 214(J) | MG/KG | HCSB0344 | 257/275 | 0.075-43.8 | 214 | 12.55 | 150 | EPA RSL (n, Nickel Soluble Salts) | 1 | Yes | ASL |
| HC | METALS | 7440-09-7 | POTASSIUM | 11.325(J) | 2950 | MG/KG | HCSB0084 | 256/270 | 0.37-5480 | 2950 | 467 | | EN | | No | EN |
| HC | METALS | 7782-49-2 | SELENIUM | 0.37(J) | 12.7(J) | MG/KG | HCSB0060 | 145/279 | 0.32-7.9 | 12.7 | | 39 | EPA RSL (n) | 0 | No | BSL |
| HC | METALS | 7440-22-4 | SILVER | 0.058(J) | 25.6(J) | MG/KG | HCSB0344 | 87/279 | 0.052-11 | 25.6 | 0.48 | 39 | EPA RSL (n) | 0 | No | BSL |
| HC | METALS | 7440-23-5 | SODIUM | 20.4(J) | 1520(J) | MG/KG | HCSB0374 | 133/279 | 0.37-4930 | 1520 | 257 | | EN | | No | EN |
| HC | METALS | 7440-28-0 | THALLIUM | 0.34(J) | 4.3(J) | MG/KG | HCSB0061 | 38/279 | 0.295-8.3 | 4.3 | 1.2 | 0.078 | EPA RSL (n, Thallium (Soluble Salts)) | 38 | Yes | ASL |
| HC | METALS | 7440-62-2 | VANADIUM | 0.58(J) | 114(J) | MG/KG | HCSB0060 | 279/279 | 0.06-54.8 | 114 | 39.6 | 39 | EPA RSL (n, Vanadium and Compounds) | 64 | Yes | ASL |
| HC | METALS | 7440-66-6 | ZINC | 1(J) | 4900(J) | MG/KG | HCSB0344 | 277/279 | 0.06-21.9 | 4900 | 208 | 2300 | EPA RSL (n) | 2 | Yes | ASL |
| HC | PEST/PCB | 72-54-8 | 4,4'-DDD | 0.00073(J) | 0.07(J) | MG/KG | HCSB0017 | 78/141 | 0.0034-0.03 | 0.07 | 0.0013 | 0.19 | EPA RSL (n) | 0 | No | BSL |
| HC | PEST/PCB | 72-55-9 | 4,4'-DDE | 0.00097(J) | 0.11(J) | MG/KG | HCSB0207 | 80/141 | 0.0034-0.03 | 0.11 | 0.0061 | 2 | EPA RSL (c) | 0 | No | BSL |
| HC | PEST/PCB | 50-29-3 | 4,4'-DDT | 0.0014(J) | 0.088(J) | MG/KG | HCSB0045 | 53/141 | 0.0034-0.03 | 0.088 | 0.0091 | 1.9 | EPA RSL (c) | 0 | No | BSL |
| HC | PEST/PCB | 309-00-2 | ALDRIN | 0.00215(J) | 0.00215(J+) | MG/KG | HCSB0032 | 1/141 | 0.0018-0.015 | 0.00215 | | 0.039 | EPA RSL (c) | 0 | No | BSL |
| HC | PEST/PCB | 319-84-6 | ALPHA-BHC | 0.022 | 0.022 | MG/KG | HCSB0220 | 1/141 | 0.0018-0.015 | 0.022 | | 0.086 | EPA RSL (c) | 0 | No | BSL |
| HC | PEST/PCB | 5103-71-9 | ALPHA-CHLORDANE | 0.0028(J) | 0.053(J) | MG/KG | HCSB0210 | 39/133 | 0.0018-0.015 | 0.053 | | 0.2 | NJ RDCSRS (c) | 0 | No | BSL |
| HC | PEST/PCB | 12672-29-6 | AROCLOR-1248 | 0.13(J) | 0.13(J) | MG/KG | HCSB0033 | 1/200 | 0.034-0.43 | 0.13 | | 0.12 | EPA RSL (n, Aroclor 1254) | 1 | No | LDF |
| HC | PEST/PCB | 11097-69-1 | AROCLOR-1254 | 0.023(J) | 1.4(J) | MG/KG | HCSB0207 | 8/200 | 0.034-0.43 | 1.4 | | 0.12 | EPA RSL (n) | 5 | Yes | ASL |
| HC | PEST/PCB | 11096-82-5 | AROCLOR-1260 | 0.035(J) | 1.6(J) | MG/KG | HCSB0229 | 36/200 | 0.034-0.43 | 1.6 | 0.022 | 0.12 | EPA RSL (n, Aroclor 1254) | 29 | Yes | ASL |
| HC | PEST/PCB | 319-85-7 | BETA-BHC | 0.0016(J) | 0.0044(J) | MG/KG | HCSB0034 | 3/141 | 0.0018-0.015 | 0.0044 | | 0.3 | EPA RSL (c) | 0 | No | BSL |
| HC | PEST/PCB | 319-86-8 | DELTA-BHC | 0.0049(J) | 0.0049(J) | MG/KG | HCSB0207 | 1/141 | 0.0018-0.015 | 0.0049 | | 0.3 | EPA RSL (c, Hexachlorocyclohexane, Beta-) | 0 | No | BSL |
| HC | PEST/PCB | 60-57-1 | DIELDRIN | 0.001(J) | 0.018(J) | MG/KG | HCSB0210 | 17/139 | 0.0034-0.03 | 0.018 | | 0.034 | EPA RSL (c) | 0 | No | BSL |
| HC | PEST/PCB | 33213-65-9 | ENDOSULFAN II | 0.012(J) | 0.04(J) | MG/KG | HCSB0063 | 15/141 | 0.0034-0.03 | 0.04 | | 47 | EPA RSL (n, Endosulfan) | 0 | No | BSL |
| HC | PEST/PCB | 1031-07-8 | ENDOSULFAN SULFATE | 0.0017(J) | 0.022(J) | MG/KG | HCSB0045; HCSB0064 | 19/138 | 0.0034-0.03 | 0.022 | | 47 | EPA RSL (n, Endosulfan) | 0 | No | BSL |
| HC | PEST/PCB | 7421-93-4 | ENDRIN ALDEHYDE | 0.0013(J) | 0.048(J) | MG/KG | HCSB0063 | 22/141 | 0.0034-0.03 | 0.048 | 0.00082 | 1.9 | EPA RSL (n, Endrin) | 0 | No | BSL |
| HC | PEST/PCB | 53494-70-5 | ENDRIN KETONE | 0.0036(J) | 0.1(J) | MG/KG | HCSB0208 | 3/139 | 0.0034-0.03 | 0.1 | 0.013 | 1.9 | EPA RSL (n, Endrin) | 0 | No | BSL |
| HC | PEST/PCB | 5103-74-2 | GAMMA-CHLORDANE | 0.0014(J) | 0.11 | MG/KG | HCSB0008/15 | 42/141 | 0.0018-0.028 | 0.11 | 0.000395 | 0.2 | NJ RDCSRS (c) | 0 | No | BSL |
| HC | PEST/PCB | 1024-57-3 | HEPTACHLOR EPOXIDE | 0.018(J) | 0.028(J) | MG/KG | HCSB0008/15 | 2/141 | 0.0018-0.015 | 0.028 | | 0.07 | EPA RSL (c) | 0 | No | BSL |
| HC | PEST/PCB | 72-43-5 | METHOXYCHLOR | 0.0029(J) | 0.0078(J) | MG/KG | HCSB0164 | 3/141 | 0.018-0.15 | 0.0078 | | 32 | EPA RSL (n) | 0 | No | BSL |
| HC | SVOC | 92-52-4 | 1,1'-BIPHENYL | 0.013(J) | 1(J) | MG/KG | HCSB0002 | 5/148 | 0.34-17 | 1 | 0.21 | 4.7 | EPA RSL (n) | 0 | No | BSL |
| HC | SVOC | 105-67-9 | 2,4-DIMETHYLPHENOL | 0.051(J) | 0.07(J) | MG/KG | HCSB0016 | 2/148 | 0.34-17 | 0.07 | | 130 | EPA RSL (n) | 0 | No | BSL |
| HC | SVOC | 91-57-6 | 2-METHYLNAPHTHALENE | 0.006(J) | 3.3(J) | MG/KG | HCSB0002 | 28/148 | 0.34-17 | 3.3 | 0.86 | 24 | EPA RSL (n) | 0 | No | BSL |
| HC | SVOC | 95-48-7 | 2-METHYLPHENOL | 0.028(J) | 0.33(J) | MG/KG | HCSB0163 | 4/148 | 0.34-17 | 0.33 | | 310 | NJ RDCSRS (n) | 0 | No | BSL |
| HC | SVOC | 106-47-8 | 4-CHLOROANILINE | 0.03(J) | 1.4(J) | MG/KG | HCSB0207 | 7/148 | 0.34-17 | 1.4 | | 2.7 | EPA RSL (c) | 0 | No | BSL |
| HC | SVOC | 106-44-5 | 4-METHYLPHENOL | 0.005(J) | 2.4(J) | MG/KG | HCSB0024 | 22/148 | 0.34-17 | 2.4 | | 31 | NJ RDCSRS (n) | 0 | No | BSL |
| HC | SVOC | 100-02-7 | 4-NITROPHENOL | 0.006(J) | 0.007(J) | MG/KG | RSSB0025 | 2/148 | 0.86-42 | 0.007 | | 13 | EPA RSL (n, 2,4-Dinitrophenol) | 0 | No | BSL |
| HC | SVOC | 83-32-9 | ACENAPHTHENE | 0.006(J) | 10(J) | MG/KG | HCSB0002 | 107/277 | 0.34-17 | 10 | 4.6 | 360 | EPA RSL (n) | 0 | No | BSL |
| HC | SVOC | 208-96-8 | ACENAPHTHYLENE | 0.004(J) | 2.5(J) | MG/KG | HCSB0016; HCSB0019 | 98/277 | 0.34-17 | 2.5 | 0.0066 | 360 | EPA RSL (n, Acenaphthene) | 0 | No | BSL |
| HC | SVOC | 98-86-2 | ACETOPHENONE | 0.008(J) | 0.13(J) | MG/KG | HCSB0021 | 6/148 | 0.34-17 | 0.13 | 0.18 | 2 | NJ RDCSRS (n) | 0 | No | BSL |
| HC | SVOC | 120-12-7 | ANTHRACENE | 0.006(J) | 21(J) | MG/KG | HCSB0002 | 155/277 | 0.34-17 | 21 | 6.6 | 1800 | EPA RSL (n) | 0 | No | BSL |
| HC | SVOC | 1912-24-9 | ATRAZINE | 4.4(J) | 4.4(J) | MG/KG | HCSB0018 | 1/148 | 0.34-17 | 4.4 | | 2.4 | EPA RSL (c) | 1 | No | LDF |
| HC | SVOC | 100-52-7 | BENZALDEHYDE | 0.004(J) | 0.495(J+) | MG/KG | HCSB0006 | 22/148 | 0.34-17 | 0.495 | 0.44 | 170 | EPA RSL (c) | 0 | No | BSL |
| HC | SVOC | 56-55-3 | BENZO(A)ANTHRACENE | 0.004(J) | 29(J) | MG/KG | HCSB0002 | 237/278 | 0.34-17 | 29 | 21 | 1.1 | EPA RSL (c) | 41 | Yes | ASL |
| HC | SVOC | 50-32-8 | BENZO(A)PYRENE | 0.005(J) | 29(J) | MG/KG | HCSB0002 | 233/278 | 0.34-17 | 29 | 17 | 0.11 | EPA RSL (c) | 158 | Yes | ASL |
| HC | SVOC | 205-99-2 | BENZO(B)FLUORANTHENE | 0.006(J) | 29(J) | MG/KG | HCSB0002 | 237/278 | 0.34-17 | 29 | 18 | 1.1 | EPA RSL (c) | 58 | Yes | ASL |
| HC | SVOC | 191-24-2 | BENZO(G,H,I)PERYLENE | 0.004(J) | 6.1(J) | MG/KG | HCSB0002 | 182/277 | 0.34-17 | 6.1 | 12 | 180 | EPA RSL (n, Pyrene) | 0 | No | BSL |
| HC | SVOC | 207-08-9 | BENZO(K)FLUORANTHENE | 0.004(J) | 27(J) | MG/KG | HCSB0002 | 225/278 | 0.34-17 | 27 | 17 | 11 | EPA RSL (c) | 3 | Yes | ASL |
| HC | SVOC | 85-68-7 | BENZYL BUTYL PHTHALATE | 0.03(J) | 0.2(J) | MG/KG | HCSB0007 | 12/148 | 0.34-17 | 0.2 | | 290 | EPA RSL (c) | 0 | No | BSL |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Soil (0-2 ft bgs) |
| Exposure Medium: | Soil from Hilliards Creek |

| Exposure Point | Chemical Group | CAS Number | Chemical | Minimum Detected Concentration (Qualifier) (1) | Maximum Detected Concentration (Qualifier) (1) | Units | Location of Maximum Concentration | Detection Frequency | Range of Detection Limits | Concentration Used for Screening (2) | Background Value (3) | Screening Criteria (4) | Criteria Basis (4) | Exceeds Crit | COPC Flag (Y/N) | Rationale for Selection or Deletion (5) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HC | SVOC | 117-81-7 | BIS(2-ETHYLHEXYL) PHTHALATE | 0.034(J) | 4.6(J) | MG/KG | HCSB0207 | 59/148 | 0.34-17 | 4.6 | | 35 | NJ RDCSRS (c) | 0 | No | BSL |
| HC | SVOC | 105-60-2 | CAPROLACTAM | 0.006(J) | 0.36(J) | MG/KG | HCSB0035 | 27/148 | 0.34-17 | 0.36 | | 3100 | EPA RSL (n) | 0 | No | BSL |
| HC | SVOC | 86-74-8 | CARBAZOLE | 0.008(J) | 11(J) | MG/KG | HCSB0002 | 74/148 | 0.34-17 | 11 | 4.4 | 24 | NJ RDCSRS (c) | 0 | No | BSL |
| HC | SVOC | 218-01-9 | CHRYSENE | 0.006(J) | 29(J) | MG/KG | HCSB0002 | 240/278 | 0.34-17 | 29 | 22 | 110 | EPA RSL (c) | 0 | No | BSL |
| HC | SVOC | 53-70-3 | DIBENZO(A,H)ANTHRACENE | 0.005(J) | 2.8(J) | MG/KG | HCSB0002 | 142/277 | 0.34-17 | 2.8 | 4.3 | 0.11 | EPA RSL (c) | 68 | Yes | ASL |
| HC | SVOC | 132-64-9 | DIBENZOFURAN | 0.006(J) | 7.1(J) | MG/KG | HCSB0002 | 40/148 | 0.34-17 | 7.1 | 2.4 | 7.3 | EPA RSL (n) | 0 | No | BSL |
| HC | SVOC | 84-74-2 | DI-N-BUTYLPHTHALATE | 0.021(J) | 0.41(J) | MG/KG | RSSB0077 | 25/148 | 0.34-17 | 0.41 | 0.041 | 630 | EPA RSL (n) | 0 | No | BSL |
| HC | SVOC | 117-84-0 | DI-N-OCTYLPHTHALATE | 0.0135(J) | 0.054(J) | MG/KG | HCSB0162 | 2/148 | 0.34-17 | 0.054 | | 63 | EPA RSL (n) | 0 | No | BSL |
| HC | SVOC | 206-44-0 | FLUORANTHENE | 0.006(J) | 68(J) | MG/KG | HCSB0002 | 248/278 | 0.34-17 | 68 | 44 | 240 | EPA RSL (n) | 0 | No | BSL |
| HC | SVOC | 86-73-7 | FLUORENE | 0.005(J) | 11(J) | MG/KG | HCSB0002 | 101/277 | 0.34-17 | 11 | 3.3 | 240 | EPA RSL (n) | 0 | No | BSL |
| HC | SVOC | 193-39-5 | INDENO(1,2,3-CD)PYRENE | 0.005(J) | 7(J) | MG/KG | HCSB0002 | 208/277 | 0.34-17 | 7 | 12 | 1.1 | EPA RSL (c) | 34 | Yes | ASL |
| HC | SVOC | 91-20-3 | NAPHTHALENE | 0.004(J) | 15(J) | MG/KG | HCSB0002 | 55/277 | 0.34-17 | 15 | 1.7 | 3.8 | EPA RSL (c) | 1 | Yes | ASL |
| HC | SVOC | 87-86-5 | PENTACHLOROPHENOL | 0.04(J) | 0.56(J) | MG/KG | HCSB0034 | 9/148 | 0.86-42 | 0.56 | | 0.9 | NJ RDCSRS (c) | 0 | No | BSL |
| HC | SVOC | 85-01-8 | PHENANTHRENE | 0.005(J) | 62(J) | MG/KG | HCSB0002 | 245/278 | 0.34-17 | 62 | 32 | 1800 | EPA RSL (n, Anthracene) | 0 | No | BSL |
| HC | SVOC | 108-95-2 | PHENOL | 0.031(J) | 0.5(J) | MG/KG | HCSB0024 | 2/148 | 0.34-17 | 0.5 | | 1900 | EPA RSL (n) | 0 | No | BSL |
| HC | SVOC | 129-00-0 | PYRENE | 0.006(J) | 41(J) | MG/KG | HCSB0002 | 248/278 | 0.34-17 | 41 | 45 | 180 | EPA RSL (n) | 0 | No | BSL |
| HC | VOC | 67-64-1 | ACETONE | 0.01(J) | 0.26 | MG/KG | HCSB0007 | 13/45 | 0.009-0.071 | 0.26 | 1.2 | 6100 | EPA RSL (n) | 0 | No | BSL |
| HC | VOC | 75-15-0 | CARBON DISULFIDE | 0.003(J) | 0.003(J) | MG/KG | RSSB0077 | 1/45 | 0.0088-0.071 | 0.003 | | 77 | EPA RSL (n) | 0 | No | BSL |
| HC | VOC | 75-09-2 | DICHLOROMETHANE | 0.0015(J) | 0.0047(J) | MG/KG | HCSB0034 | 6/45 | 0.0088-0.071 | 0.0047 | 0.001 | 35 | EPA RSL (n) | 0 | No | BSL |
| HC | VOC | 100-41-4 | ETHYLBENZENE | 0.018 | 0.018 | MG/KG | HCSB0003 | 1/45 | 0.0088-0.071 | 0.018 | | 5.8 | EPA RSL (c) | 0 | No | BSL |
| HC | VOC | 78-93-3 | METHYL ETHYL KETONE | 0.006(J) | 0.048(J) | MG/KG | HCSB0081 | 6/45 | 0.0088-0.071 | 0.048 | 0.14 | 2700 | EPA RSL (n) | 0 | No | BSL |
| HC | VOC | 100-42-5 | STYRENE | 0.002(J) | 0.2 | MG/KG | HCSB0002 | 8/45 | 0.0088-0.071 | 0.2 | | 90 | NJ RDCSRS (n) | 0 | No | BSL |
| HC | VOC | 127-18-4 | TETRACHLOROETHENE | 0.011(J) | 0.011(J) | MG/KG | HCSB0080 | 1/45 | 0.0088-0.071 | 0.011 | | 8.1 | EPA RSL (n) | 0 | No | BSL |

Notes:

Only analytes detected in at least one sample are presented.

(1) J – Estimated. + – Value is the average of a parent sample and a field duplicate sample. B – Analyte was detected in an associated blank sample.

(2) The maximum detected concentration was used for the screening.

(3) Maximum detected concentrations from project background locations.

(4) All compounds were screened against the lower of the EPA (2017e) Regional Screening Level (RSL) for residential soil (THQ = 0.1; Target Cancer Risk = $10^{-6}$) and New Jersey Residential Direct Contact Soil Remediation Standards (NJ RDCSRS) (NJDEP, 2017).

(n) – Non-cancer. (Surrogate/form) – Surrogate/chemical form used in the absence of chemical-specific screening value.

(c) – Cancer.

(L) – Based on blood lead modeling.

(5) Rationale codes:

Selection reason: ASL – Above screening level.

Deletion reason: BSL – Below screening level.

EN – Essential human nutrient.

LDF – Low detection frequency (<5%).

**Table 2.3**
**Occurrence, Distribution, and Selection of Chemicals of Potential Concern**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Soil (0-2 ft bgs) |
| Exposure Medium: | Soil from Kirkwood Lake |

| Exposure Point | Chemical Group | CAS Number | Chemical | Minimum Detected Concentration (Qualifier) (1) | Maximum Detected Concentration (Qualifier) (1) | Units | Location of Maximum Concentration | Detection Frequency | Range of Detection Limits | Concentration Used for Screening (2) | Background Value (3) | Screening Criteria (4) | Criteria Basis (4) | Exceeds Crit | COPC Flag (Y/N) | Rationale for Selection or Deletion (5) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KWL | METALS | 7429-90-5 | ALUMINUM | 603 | 14200(J) | MG/KG | KWSB0007 | 36/36 | 15-98.1 | 14200 | 15300 | 7700 | EPA RSL (n) | 3 | Yes | ASL |
| KWL | METALS | 7440-36-0 | ANTIMONY | 0.78(J) | 29(J) | MG/KG | KWSB0004 | 16/36 | 0.44-29.4 | 29 | 3.4 | 3.1 | EPA RSL (n, Antimony (metallic)) | 4 | Yes | ASL |
| KWL | METALS | 7440-38-2 | ARSENIC | 0.68(J) | 25.2 | MG/KG | KWSB0013 | 32/36 | 0.66-4.9 | 25.2 | 194 | 0.68 | EPA RSL (c) | 31 | Yes | ASL |
| KWL | METALS | 7440-39-3 | BARIUM | 2.9(J) | 498 | MG/KG | KWSB0035 | 36/36 | 0.49-98.1 | 498 | 287 | 1500 | EPA RSL (n) | 0 | No | BSL |
| KWL | METALS | 7440-41-7 | BERYLLIUM | 0.043(J) | 0.45(J+) | MG/KG | KWSB0028 | 19/36 | 0.04-2.5 | 0.45 | 1.035 | 16 | EPA RSL (n) | 0 | No | BSL |
| KWL | METALS | 7440-43-9 | CADMIUM | 0.13(J) | 2.4(J) | MG/KG | KWSB0041 | 15/36 | 0.044-2.5 | 2.4 | 3.7 | 7.1 | EPA RSL (n, Cadmium (Diet)) | 0 | No | BSL |
| KWL | METALS | 7440-70-2 | CALCIUM | 25(J) | 4660(J) | MG/KG | KWSB0026 | 36/36 | 18-2450 | 4660 | 7600 | | EN | | No | EN |
| KWL | METALS | 7440-47-3 | CHROMIUM | 2.1(J) | 65.6(J+) | MG/KG | KWSB0028 | 36/36 | 0.49-4.9 | 65.6 | 249 | 0.3 | EPA RSL (c, Chromium(VI)) | 36 | Yes | ASL |
| KWL | METALS | 7440-48-4 | COBALT | 0.36(J) | 3.6(J) | MG/KG | KWSB0032 | 7/36 | 0.49-24.5 | 3.6 | 7.75 | 2.3 | EPA RSL (n) | 1 | Yes | ASL |
| KWL | METALS | 7440-50-8 | COPPER | 1.2(J) | 84.8(J) | MG/KG | KWSB0007 | 36/36 | 0.32-12.3 | 84.8 | 72.5 | 310 | EPA RSL (n) | 0 | No | BSL |
| KWL | METALS | 57-12-5 | CYANIDE | 0.13(J) | 2.7(J) | MG/KG | KWSB0004 | 10/36 | 0.03-3.1 | 2.7 | 58.4 | 2.3 | EPA RSL (n, Cyanide (CN-)) | 1 | Yes | ASL |
| KWL | METALS | 7439-89-6 | IRON | 651 | 21500 | MG/KG | KWSB0032 | 36/36 | 5-49.1 | 21500 | 50400 | 5500 | EPA RSL (n) | 15 | Yes | ASL |
| KWL | METALS | 7439-92-1 | LEAD | 6.7 | 1680 | MG/KG | KWSB0013 | 36/36 | 0.45-49.1 | 1680 | 178 | 400 | EPA RSL (L, Lead and Compounds) | 5 | Yes | ASL |
| KWL | METALS | 7439-95-4 | MAGNESIUM | 19.5(J) | 633(J) | MG/KG | KWSB0033 | 36/36 | 12-2450 | 633 | 926 | | EN | | No | EN |
| KWL | METALS | 7439-96-5 | MANGANESE | 3(J) | 128 | MG/KG | KWSB0032 | 36/36 | 0.42-7.4 | 128 | 316 | 180 | EPA RSL (n, Manganese (Non-diet)) | 0 | No | BSL |
| KWL | METALS | 7439-97-6 | MERCURY | 0.025(J) | 0.76 | MG/KG | KWSB0035 | 24/36 | 0.012-0.63 | 0.76 | 0.45 | 2.3 | EPA RSL (n, Mercuric Chloride (and other Mercury salts)) | 0 | No | BSL |
| KWL | METALS | 7440-02-0 | NICKEL | 0.4(J) | 8.9(J) | MG/KG | KWSB0032 | 36/36 | 0.19-19.6 | 8.9 | 12.55 | 150 | EPA RSL (n, Nickel Soluble Salts) | 0 | No | BSL |
| KWL | METALS | 7440-09-7 | POTASSIUM | 68.5(J) | 1870(J) | MG/KG | KWSB0033 | 36/36 | 16-2450 | 1870 | 467 | | EN | | No | EN |
| KWL | METALS | 7782-49-2 | SELENIUM | 0.74(J) | 3.7(J) | MG/KG | KWSB0026 | 5/36 | 0.4-17.2 | 3.7 | | 39 | EPA RSL (n) | 0 | No | BSL |
| KWL | METALS | 7440-22-4 | SILVER | 0.26(J) | 0.38(J) | MG/KG | KWSB0027 | 2/36 | 0.052-4.9 | 0.38 | 0.48 | 39 | EPA RSL (n) | 0 | No | BSL |
| KWL | METALS | 7440-23-5 | SODIUM | 11.25(J) | 606(J) | MG/KG | KWSB0026 | 33/36 | 18.3-2450 | 606 | 257 | | EN | | No | EN |
| KWL | METALS | 7440-28-0 | THALLIUM | 0.44(J) | 0.44(J) | MG/KG | HCSB0199 | 1/36 | 0.31-12.3 | 0.44 | 1.2 | 0.078 | EPA RSL (n, Thallium (Soluble Salts)) | 1 | Yes | ASL |
| KWL | METALS | 7440-62-2 | VANADIUM | 3.4(J) | 24.45(J+) | MG/KG | KWSB0028 | 36/36 | 0.47-24.5 | 24.45 | 39.6 | 39 | EPA RSL (n, Vanadium and Compounds) | 0 | No | BSL |
| KWL | METALS | 7440-66-6 | ZINC | 1.6(J) | 428(J) | MG/KG | KWSB0035 | 36/36 | 0.45-51.75 | 428 | 208 | 2300 | EPA RSL (n) | 0 | No | BSL |
| KWL | PEST/PCB | 72-55-9 | 4,4'-DDE | 0.015(J) | 0.1(J) | MG/KG | HCSB0199 | 2/2 | 0.0034-0.017 | 0.1 | 0.0061 | 2 | EPA RSL (c) | 0 | No | BSL |
| KWL | PEST/PCB | 50-29-3 | 4,4'-DDT | 0.018(J) | 0.053(J) | MG/KG | HCSB0199 | 2/2 | 0.0034-0.017 | 0.053 | 0.0091 | 1.9 | EPA RSL (c) | 0 | No | BSL |
| KWL | SVOC | 83-32-9 | ACENAPHTHENE | 0.007(J) | 0.023(J) | MG/KG | KWSB0033 | 4/31 | 0.34-1.6 | 0.023 | 4.6 | 360 | EPA RSL (n) | 0 | No | BSL |
| KWL | SVOC | 208-96-8 | ACENAPHTHYLENE | 0.009(J) | 0.28(J) | MG/KG | KWSB0032 | 10/31 | 0.34-1.6 | 0.28 | 0.0066 | 360 | EPA RSL (n, Acenaphthene) | 0 | No | BSL |
| KWL | SVOC | 120-12-7 | ANTHRACENE | 0.009(J) | 0.2215(J+) | MG/KG | KWSB0028 | 12/31 | 0.34-1.6 | 0.2215 | 6.6 | 1800 | EPA RSL (n) | 0 | No | BSL |
| KWL | SVOC | 56-55-3 | BENZO(A)ANTHRACENE | 0.005(J) | 0.3(J) | MG/KG | KWSB0032 | 25/31 | 0.34-1.6 | 0.3 | 21 | 1.1 | EPA RSL (c) | 0 | No | BSL |
| KWL | SVOC | 50-32-8 | BENZO(A)PYRENE | 0.005(J) | 0.33(J) | MG/KG | KWSB0032 | 19/31 | 0.34-1.6 | 0.33 | 17 | 0.11 | EPA RSL (c) | 6 | Yes | ASL |
| KWL | SVOC | 205-99-2 | BENZO(B)FLUORANTHENE | 0.006(J) | 0.99 | MG/KG | KWSB0032 | 24/31 | 0.34-1.6 | 0.99 | 18 | 1.1 | EPA RSL (c) | 0 | No | BSL |
| KWL | SVOC | 191-24-2 | BENZO(G,H,I)PERYLENE | 0.013(J) | 0.17(J) | MG/KG | HCSB0199 | 6/31 | 0.34-1.6 | 0.17 | 12 | 180 | EPA RSL (n, Pyrene) | 0 | No | BSL |
| KWL | SVOC | 207-08-9 | BENZO(K)FLUORANTHENE | 0.007(J) | 0.7 | MG/KG | KWSB0032 | 23/31 | 0.34-1.6 | 0.7 | 17 | 11 | EPA RSL (c) | 0 | No | BSL |
| KWL | SVOC | 218-01-9 | CHRYSENE | 0.006(J) | 0.46 | MG/KG | KWSB0032 | 26/31 | 0.34-1.6 | 0.46 | 22 | 110 | EPA RSL (c) | 0 | No | BSL |
| KWL | SVOC | 53-70-3 | DIBENZO(A,H)ANTHRACENE | 0.008(J) | 0.066(J) | MG/KG | KWSB0032 | 9/31 | 0.34-1.6 | 0.066 | 4.3 | 0.11 | EPA RSL (c) | 0 | No | BSL |
| KWL | SVOC | 206-44-0 | FLUORANTHENE | 0.006(J) | 0.62 | MG/KG | KWSB0032 | 27/31 | 0.34-1.6 | 0.62 | 44 | 240 | EPA RSL (n) | 0 | No | BSL |
| KWL | SVOC | 86-73-7 | FLUORENE | 0.005(J) | 0.037(J) | MG/KG | KWSB0033 | 5/31 | 0.34-1.6 | 0.037 | 3.3 | 240 | EPA RSL (n) | 0 | No | BSL |
| KWL | SVOC | 193-39-5 | INDENO(1,2,3-CD)PYRENE | 0.006(J) | 0.14(J) | MG/KG | HCSB0199; KWSB0032 | 14/31 | 0.34-1.6 | 0.14 | 12 | 1.1 | EPA RSL (c) | 0 | No | BSL |
| KWL | SVOC | 91-20-3 | NAPHTHALENE | 0.016(J) | 0.016(J) | MG/KG | KWSB0032 | 1/31 | 0.34-1.6 | 0.016 | 1.7 | 3.8 | EPA RSL (c) | 0 | No | BSL |
| KWL | SVOC | 85-01-8 | PHENANTHRENE | 0.006(J) | 0.4(J) | MG/KG | KWSB0033 | 24/31 | 0.34-1.6 | 0.4 | 32 | 1800 | EPA RSL (n, Anthracene) | 0 | No | BSL |
| KWL | SVOC | 129-00-0 | PYRENE | 0.006(J) | 0.43 | MG/KG | KWSB0032 | 27/31 | 0.34-1.6 | 0.43 | 45 | 180 | EPA RSL (n) | 0 | No | BSL |

Notes:

Only analytes detected in at least one sample are presented.

(1) J – Estimated. + – Value is the average of a parent sample and a field duplicate sample. B – Analyte was detected in an associated blank sample.

(2) The maximum detected concentration was used for the screening.

(3) Maximum detected concentrations from project background locations.

(4) All compounds were screened against the lower of the EPA (2017e) Regional Screening Level (RSL) for residential soil (THQ = 0.1; Target Cancer Risk = $10^{-6}$) and New Jersey Residential Direct Contact Soil Remediation Standards (NJ RDCSRS) (NJDEP, 2017).

(n) – Non-cancer. (Surrogate/form) – Surrogate/chemical form used in the absence of chemical-specific screening value.

(c) – Cancer.

(L) – Based on blood lead modeling.

(5) Rationale codes:

Selection reason: ASL – Above screening level.

Deletion reason: BSL – Below screening level.

EN – Essential human nutrient.

LDF – Low detection frequency (<5%).

**Table 2.4**
**Occurrence, Distribution, and Selection of Chemicals of Potential Concern**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Sediment (0-0.5) |
| Exposure Medium: | Sediment from Silver Lake |

| Exposure Point | Chemical Group | CAS Number | Chemical | Minimum Detected Concentration (Qualifier) (1) | Maximum Detected Concentration (Qualifier) (1) | Units | Location of Maximum Concentration | Detection Frequency | Range of Detection Limits | Concentration Used for Screening (2) | Background Value (3) | Screening Criteria (4) | Criteria Basis (4) | Exceeds Crit | COPC Flag (Y/N) | Rationale for Selection or Deletion (5) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SL | METALS | 7429-90-5 | ALUMINUM | 121 | 10900(J) | MG/KG | SLDD0009 | 33/33 | 18-65.9 | 10900 | 12000 | 7700 | EPA RSL (n) | 1 | Yes | ASL |
| SL | METALS | 7440-36-0 | ANTIMONY | 0.84(J) | 3.6(J) | MG/KG | SLDD0010 | 9/33 | 5.4-19.75 | 3.6 | 1.7 | 3.1 | EPA RSL (n, Antimony (metallic)) | 1 | Yes | ASL |
| SL | METALS | 7440-38-2 | ARSENIC | 0.68(J) | 28.1(J) | MG/KG | SLDD0009 | 30/33 | 0.9-3.3 | 28.1 | 15.2 | 0.68 | EPA RSL (c) | 29 | Yes | ASL |
| SL | METALS | 7440-39-3 | BARIUM | 3.9(J) | 312(J) | MG/KG | SLDD0009 | 26/33 | 18-65.9 | 312 | 195 | 1500 | EPA RSL (n) | 0 | No | BSL |
| SL | METALS | 7440-41-7 | BERYLLIUM | 0.093(J) | 0.64(J) | MG/KG | SLDD0009 | 7/33 | 0.45-1.65 | 0.64 | 0.96 | 16 | EPA RSL (n) | 0 | No | BSL |
| SL | METALS | 7440-43-9 | CADMIUM | 0.067(J) | 1.4 | MG/KG | SLDD0012 | 21/33 | 0.45-1.65 | 1.4 | 3.1 | 7.1 | EPA RSL (n, Cadmium (Diet)) | 0 | No | BSL |
| SL | METALS | 7440-70-2 | CALCIUM | 44.4(J) | 78000 | MG/KG | SLDD0029 | 32/33 | 450-5020 | 78000 | 3690 | | EN | | No | EN |
| SL | METALS | 7440-47-3 | CHROMIUM | 1.3 | 52.5(J) | MG/KG | SLDD0009 | 33/33 | 0.9-3.3 | 52.5 | 33.6 | 0.3 | EPA RSL (c, Chromium(VI)) | 33 | Yes | ASL |
| SL | METALS | 7440-48-4 | COBALT | 0.15(J) | 15.1(J) | MG/KG | SLDD0010 | 29/33 | 4.5-16.45 | 15.1 | 15.3 | 2.3 | EPA RSL (n) | 13 | Yes | ASL |
| SL | METALS | 7440-50-8 | COPPER | 0.34(J) | 360(J) | MG/KG | SLDD0026 | 33/33 | 2.2-8.25 | 360 | 48.3 | 310 | EPA RSL (n) | 1 | Yes | ASL |
| SL | METALS | 57-12-5 | CYANIDE | 0.07(J) | 7.9(J) | MG/KG | SLDD0009 | 23/33 | 2.7-9.2 | 7.9 | 0.2 | 2.3 | EPA RSL (n, Cyanide (CN-)) | 3 | Yes | ASL |
| SL | METALS | 7439-89-6 | IRON | 158 | 22000(J) | MG/KG | SLDD0009 | 33/33 | 9-32.95 | 22000 | 18200 | 5500 | EPA RSL (n) | 14 | Yes | ASL |
| SL | METALS | 7439-92-1 | LEAD | 3.1 | 1630(J) | MG/KG | SLDD0009 | 33/33 | 0.9-4.8 | 1630 | 240 | 400 | EPA RSL (L, Lead and Compounds) | 4 | Yes | ASL |
| SL | METALS | 7439-95-4 | MAGNESIUM | 11(J) | 42600 | MG/KG | SLDD0029 | 32/33 | 450-1650 | 42600 | 590 | | EN | | No | EN |
| SL | METALS | 7439-96-5 | MANGANESE | 3.7 | 397 | MG/KG | SLDD0027 | 33/33 | 1.3-4.95 | 397 | 111 | 180 | EPA RSL (n, Manganese (Non-diet)) | 3 | Yes | ASL |
| SL | METALS | 7439-97-6 | MERCURY | 0.0097 | 0.67(J) | MG/KG | SLDD0009 | 23/33 | 0.089-0.37 | 0.67 | 0.525 | 2.3 | EPA RSL (n, Mercuric Chloride (and other Mercury salts)) | 0 | No | BSL |
| SL | METALS | 7440-02-0 | NICKEL | 0.3(J) | 14.4(J) | MG/KG | SLDD0026 | 32/33 | 3.6-13 | 14.4 | 21.4 | 150 | EPA RSL (n, Nickel Soluble Salts) | 0 | No | BSL |
| SL | METALS | 7440-09-7 | POTASSIUM | 24.6(J) | 1590 | MG/KG | SLDD0032 | 33/33 | 450-1650 | 1590 | 480 | | EN | | No | EN |
| SL | METALS | 7782-49-2 | SELENIUM | 0.58(J) | 1.8(J+) | MG/KG | SLDD0019 | 4/33 | 3.1-11.5 | 1.8 | 2.1 | 39 | EPA RSL (n) | 0 | No | BSL |
| SL | METALS | 7440-22-4 | SILVER | 0.2(J) | 2.4(J+) | MG/KG | SLDD0019 | 2/33 | 0.9-3.3 | 2.4 | 0.3 | 39 | EPA RSL (n) | 0 | No | BSL |
| SL | METALS | 7440-23-5 | SODIUM | 8.1(J) | 1050 | MG/KG | SLDD0032 | 32/33 | 450-1650 | 1050 | 414 | | EN | | No | EN |
| SL | METALS | 7440-28-0 | THALLIUM | 0.25(J) | 6.35(J+) | MG/KG | SLDD0019 | 3/33 | 2.2-8.25 | 6.35 | 4.9 | 0.078 | EPA RSL (n, Thallium (Soluble Salts)) | 3 | Yes | ASL |
| SL | METALS | 7440-62-2 | VANADIUM | 0.62(J) | 29.5 | MG/KG | SLDD0027 | 33/33 | 4.5-16.45 | 29.5 | 37.1 | 39 | EPA RSL (n, Vanadium and Compounds) | 0 | No | BSL |
| SL | METALS | 7440-66-6 | ZINC | 0.59(J) | 372(J) | MG/KG | SLDD0009 | 33/33 | 5.4-19.75 | 372 | 361 | 2300 | EPA RSL (n) | 0 | No | BSL |
| SL | PEST/PCB | 72-54-8 | 4,4'-DDD | 0.004(J) | 0.038 | MG/KG | SLDD0012 | 5/31 | 0.0039-0.0125 | 0.038 | 0.0031 | 0.19 | EPA RSL (n) | 0 | No | BSL |
| SL | PEST/PCB | 72-55-9 | 4,4'-DDE | 0.0044(J) | 0.014(J) | MG/KG | SLDD0002 | 8/33 | 0.0039-0.0125 | 0.014 | 0.0027 | 2 | EPA RSL (c) | 0 | No | BSL |
| SL | PEST/PCB | 50-29-3 | 4,4'-DDT | 0.0042(J) | 0.034 | MG/KG | SLDD0012 | 5/31 | 0.0039-0.0125 | 0.034 | 0.001 | 1.9 | EPA RSL (c) | 0 | No | BSL |
| SL | PEST/PCB | 319-84-6 | ALPHA-BHC | 0.0042(J) | 0.0042(J) | MG/KG | SLDD0028 | 1/33 | 0.002-0.00645 | 0.0042 | | 0.086 | EPA RSL (c) | 0 | No | BSL |
| SL | PEST/PCB | 5103-71-9 | ALPHA-CHLORDANE | 0.0027(J) | 0.009(J) | MG/KG | SLDD0024 | 2/31 | 0.002-0.00645 | 0.009 | 0.0014 | 0.2 | NJ RDCSRS (c) | 0 | No | BSL |
| SL | PEST/PCB | 11097-69-1 | AROCLOR-1254 | 0.063(J) | 0.23 | MG/KG | SLDD0002 | 4/33 | 0.039-0.125 | 0.23 | 0.042 | 0.12 | EPA RSL (n) | 2 | Yes | ASL |
| SL | PEST/PCB | 11096-82-5 | AROCLOR-1260 | 0.04(J) | 0.1(J) | MG/KG | SLDD0027 | 5/33 | 0.039-0.125 | 0.1 | 0.03435 | 0.12 | EPA RSL (n, Aroclor 1254) | 0 | No | BSL |
| SL | PEST/PCB | 319-86-8 | DELTA-BHC | 0.0021(J) | 0.0021(J) | MG/KG | SLDD0002 | 1/33 | 0.002-0.00645 | 0.0021 | 0.00164 | 0.3 | EPA RSL (c, Hexachlorocyclohexane, Beta-) | 0 | No | BSL |
| SL | PEST/PCB | 959-98-8 | ENDOSULFAN I | 0.0038(J) | 0.0038(J) | MG/KG | SLDD0028 | 1/33 | 0.002-0.00645 | 0.0038 | | 47 | EPA RSL (n) | 0 | No | BSL |
| SL | PEST/PCB | 72-20-8 | ENDRIN | 0.0059 | 0.038(J) | MG/KG | SLDD0028 | 2/33 | 0.0039-0.0125 | 0.038 | | 1.9 | EPA RSL (n) | 0 | No | BSL |
| SL | PEST/PCB | 7421-93-4 | ENDRIN ALDEHYDE | 0.00905(J) | 0.031(J) | MG/KG | SLDD0028 | 3/32 | 0.0039-0.0125 | 0.031 | | 1.9 | EPA RSL (n, Endrin) | 0 | No | BSL |
| SL | PEST/PCB | 53494-70-5 | ENDRIN KETONE | 0.0083(J) | 0.061(J) | MG/KG | SLDD0028 | 2/32 | 0.0039-0.0125 | 0.061 | | 1.9 | EPA RSL (n, Endrin) | 0 | No | BSL |
| SL | PEST/PCB | 76-44-8 | HEPTACHLOR | 0.0036(J) | 0.0036(J) | MG/KG | SLDD0028 | 1/33 | 0.002-0.00645 | 0.0036 | | 0.1 | NJ RDCSRS (c) | 0 | No | BSL |
| SL | SVOC | 92-52-4 | 1,1'-BIPHENYL | 0.051(J) | 0.35 | MG/KG | SLDD0005 | 3/33 | 0.21-2.2 | 0.35 | | 4.7 | EPA RSL (n) | 0 | No | BSL |
| SL | SVOC | 91-57-6 | 2-METHYLNAPHTHALENE | 0.0014(J) | 0.4(J) | MG/KG | SLDD0028 | 11/33 | 0.004-2.2 | 0.4 | 0.0016 | 24 | EPA RSL (n) | 0 | No | BSL |
| SL | SVOC | 106-44-5 | 4-METHYLPHENOL | 0.036(J) | 0.036(J) | MG/KG | SLDD0026 | 1/33 | 0.21-2.2 | 0.036 | | 31 | NJ RDCSRS (n) | 0 | No | BSL |
| SL | SVOC | 83-32-9 | ACENAPHTHENE | 0.00089(J) | 5 | MG/KG | SLDD0028 | 17/33 | 0.004-3.5 | 5 | 0.01 | 360 | EPA RSL (n) | 0 | No | BSL |
| SL | SVOC | 208-96-8 | ACENAPHTHYLENE | 0.0012(J) | 0.044(J) | MG/KG | SLDD0002 | 11/33 | 0.004-2.2 | 0.044 | | 360 | EPA RSL (n, Acenaphthene) | 0 | No | BSL |
| SL | SVOC | 98-86-2 | ACETOPHENONE | 0.054(J) | 0.055(J) | MG/KG | SLDD0002 | 2/33 | 0.21-2.2 | 0.055 | 0.1295 | 2 | NJ RDCSRS (n) | 0 | No | BSL |
| SL | SVOC | 120-12-7 | ANTHRACENE | 0.0012(J) | 12 | MG/KG | SLDD0028 | 24/33 | 0.004-2.2 | 12 | 0.025 | 1800 | EPA RSL (n) | 0 | No | BSL |
| SL | SVOC | 100-52-7 | BENZALDEHYDE | 0.049(J) | 0.22(J+) | MG/KG | SLDD0019 | 7/33 | 0.21-2.2 | 0.22 | 0.19 | 170 | EPA RSL (c) | 0 | No | BSL |
| SL | SVOC | 56-55-3 | BENZO(A)ANTHRACENE | 0.00098(J) | 57 | MG/KG | SLDD0028 | 32/33 | 0.004-2.2 | 57 | 0.19 | 1.1 | EPA RSL (c) | 3 | Yes | ASL |
| SL | SVOC | 50-32-8 | BENZO(A)PYRENE | 0.0056 | 63 | MG/KG | SLDD0028 | 33/33 | 0.004-2.2 | 63 | 0.18 | 0.11 | EPA RSL (c) | 16 | Yes | ASL |
| SL | SVOC | 205-99-2 | BENZO(B)FLUORANTHENE | 0.001(J) | 130(J) | MG/KG | SLDD0028 | 33/33 | 0.004-2.2 | 130 | 0.27 | 1.1 | EPA RSL (c) | 4 | Yes | ASL |
| SL | SVOC | 191-24-2 | BENZO(G,H,I)PERYLENE | 0.00095(J) | 9.7 | MG/KG | SLDD0028 | 33/33 | 0.004-3.5 | 9.7 | 0.14 | 180 | EPA RSL (n, Pyrene) | 0 | No | BSL |
| SL | SVOC | 207-08-9 | BENZO(K)FLUORANTHENE | 0.0019(J) | 16 | MG/KG | SLDD0002 | 30/33 | 0.004-2.2 | 16 | 0.22 | 11 | EPA RSL (c) | 1 | Yes | ASL |
| SL | SVOC | 85-68-7 | BENZYL BUTYL PHTHALATE | 0.022(J) | 0.0665(J+) | MG/KG | SLDD0008 | 14/33 | 0.21-2.2 | 0.0665 | 0.162 | 290 | EPA RSL (c) | 0 | No | BSL |
| SL | SVOC | 117-81-7 | BIS(2-ETHYLHEXYL) PHTHALATE | 0.26 | 3.2 | MG/KG | SLDD0002 | 4/33 | 0.21-2.2 | 3.2 | 0.29 | 35 | NJ RDCSRS (c) | 0 | No | BSL |
| SL | SVOC | 105-60-2 | CAPROLACTAM | 0.029(J) | 0.091(J) | MG/KG | SLDD0026 | 6/33 | 0.21-2.2 | 0.091 | 0.13 | 3100 | EPA RSL (n) | 0 | No | BSL |
| SL | SVOC | 86-74-8 | CARBAZOLE | 0.032(J) | 11 | MG/KG | SLDD0028 | 9/33 | 0.21-2.2 | 11 | | 24 | NJ RDCSRS (c) | 0 | No | BSL |
| SL | SVOC | 218-01-9 | CHRYSENE | 0.0018(J) | 86 | MG/KG | SLDD0028 | 32/33 | 0.004-2.2 | 86 | 0.24 | 110 | EPA RSL (c) | 0 | No | BSL |
| SL | SVOC | 53-70-3 | DIBENZO(A,H)ANTHRACENE | 0.0012(J) | 4.1 | MG/KG | SLDD0028 | 28/33 | 0.003-3.5 | 4.1 | 0.043 | 0.11 | EPA RSL (c) | 4 | Yes | ASL |
| SL | SVOC | 132-64-9 | DIBENZOFURAN | 0.049(J) | 2.7 | MG/KG | SLDD0028 | 4/33 | 0.21-2.2 | 2.7 | | 7.3 | EPA RSL (n) | 0 | No | BSL |
| SL | SVOC | 84-66-2 | DIETHYLPHTHALATE | 0.025(J) | 0.031(J) | MG/KG | SLDD0001 | 3/33 | 0.21-2.2 | 0.031 | | 5100 | EPA RSL (n) | 0 | No | BSL |
| SL | SVOC | 84-74-2 | DI-N-BUTYLPHTHALATE | 0.026(J) | 0.1925(J+) | MG/KG | SLDD0019 | 8/33 | 0.21-2.2 | 0.1925 | 0.0155 | 630 | EPA RSL (n) | 0 | No | BSL |
| SL | SVOC | 117-84-0 | DI-N-OCTYLPHTHALATE | 0.057(J) | 0.52 | MG/KG | SLDD0026 | 3/33 | 0.21-2.2 | 0.52 | 0.33 | 63 | EPA RSL (n) | 0 | No | BSL |
| SL | SVOC | 206-44-0 | FLUORANTHENE | 0.0016(J) | 240 | MG/KG | SLDD0028 | 33/33 | 0.004-2.2 | 240 | 0.42 | 240 | EPA RSL (n) | 0 | No | BSL |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Sediment (0-0.5) |
| Exposure Medium: | Sediment from Silver Lake |

| Exposure Point | Chemical Group | CAS Number | Chemical | Minimum Detected Concentration (Qualifier) (1) | Maximum Detected Concentration (Qualifier) (1) | Units | Location of Maximum Concentration | Detection Frequency | Range of Detection Limits | Concentration Used for Screening (2) | Background Value (3) | Screening Criteria (4) | Criteria Basis (4) | Exceeds Crit | COPC Flag (Y/N) | Rationale for Selection or Deletion (5) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SL | SVOC | 86-73-7 | FLUORENE | 0.0013(J) | 6.9 | MG/KG | SLDD0028 | 21/33 | 0.004-3.5 | 6.9 | 0.00255 | 240 | EPA RSL (n) | 0 | No | BSL |
| SL | SVOC | 118-74-1 | HEXACHLOROBENZENE | 0.042(J) | 0.042(J) | MG/KG | SLDD0026 | 1/33 | 0.21-2.2 | 0.042 | | 0.21 | EPA RSL (c) | 0 | No | BSL |
| SL | SVOC | 193-39-5 | INDENO(1,2,3-CD)PYRENE | 0.0018(J) | 11 | MG/KG | SLDD0028 | 32/33 | 0.004-2.2 | 11 | 0.15 | 1.1 | EPA RSL (c) | 3 | Yes | ASL |
| SL | SVOC | 91-20-3 | NAPHTHALENE | 0.0064 | 0.4(J) | MG/KG | SLDD0028 | 11/33 | 0.004-2.2 | 0.4 | 0.0016 | 3.8 | EPA RSL (c) | 0 | No | BSL |
| SL | SVOC | 87-86-5 | PENTACHLOROPHENOL | 0.0017(J) | 0.17(J) | MG/KG | SLDD0030 | 4/33 | 0.0081-4.3 | 0.17 | 0.0044 | 0.9 | NJ RDCSRS (c) | 0 | No | BSL |
| SL | SVOC | 85-01-8 | PHENANTHRENE | 0.00095(J) | 110 | MG/KG | SLDD0028 | 32/33 | 0.004-2.2 | 110 | 0.2 | 1800 | EPA RSL (n, Anthracene) | 0 | No | BSL |
| SL | SVOC | 129-00-0 | PYRENE | 0.006 | 110 | MG/KG | SLDD0028 | 29/33 | 0.004-2.2 | 110 | 0.37 | 180 | EPA RSL (n) | 0 | No | BSL |
| SL | VOC | 108-10-1 | 4-METHYL-2-PENTANONE | 0.015(J) | 0.021(J) | MG/KG | SLDD0010 | 2/33 | 0.00975-0.088 | 0.021 | | 3300 | EPA RSL (n) | 0 | No | BSL |
| SL | VOC | 67-64-1 | ACETONE | 0.0045(J) | 1 | MG/KG | SLDD0013 | 31/33 | 0.00975-0.082 | 1 | 0.48 | 6100 | EPA RSL (n) | 0 | No | BSL |
| SL | VOC | 75-15-0 | CARBON DISULFIDE | 0.0031(J) | 0.14(J) | MG/KG | SLDD0010 | 8/32 | 0.005-0.14 | 0.14 | 0.041 | 77 | EPA RSL (n) | 0 | No | BSL |
| SL | VOC | 67-66-3 | CHLOROFORM | 0.0046(J) | 0.026(J) | MG/KG | SLDD0019 | 5/32 | 0.005-0.044 | 0.026 | | 0.32 | EPA RSL (c) | 0 | No | BSL |
| SL | VOC | 78-93-3 | METHYL ETHYL KETONE | 0.005825(J) | 0.38 | MG/KG | SLDD0013 | 23/32 | 0.00975-0.1 | 0.38 | 0.36 | 2700 | EPA RSL (n) | 0 | No | BSL |
| SL | VOC | 108-87-2 | METHYLCYCLOHEXANE | 0.0032(J) | 0.12 | MG/KG | SLDD0009 | 4/33 | 0.005-0.044 | 0.12 | | 650 | EPA RSL (n, Cyclohexane) | 0 | No | BSL |
| SL | VOC | 1634-04-4 | METHYL-TERT-BUTYL-ETHER (MTBE) | 0.0038(J) | 0.44(J) | MG/KG | SLDD0024 | 2/32 | 0.005-0.044 | 0.44 | | 47 | EPA RSL (c) | 0 | No | BSL |

Notes:

Only analytes detected in at least one sample are presented.

(1) J – Estimated. + – Value is the average of a parent sample and a field duplicate sample. B – Analyte was detected in an associated blank sample.

(2) The maximum detected concentration was used for the screening.

(3) Maximum detected concentrations from samples collected from Clement Lake (Gradient, 2018).

(4) All compounds were screened against the lower of the EPA (2017e) Regional Screening Level (RSL) for residential soil (THQ = 0.1; Target Cancer Risk = $10^{-6}$) and New Jersey Residential Direct Contact Soil Remediation Standards (NJ RDCSRS) (NJDEP, 2017).

(n) – Non-cancer. (Surrogate/form) – Surrogate/chemical form used in the absence of chemical-specific screening value.

(c) – Cancer.

(L) – Based on blood lead modeling.

(5) Rationale codes:

Selection reason: ASL – Above screening level.

Deletion reason: BSL – Below screening level.

EN – Essential human nutrient.

LDF – Low detection frequency (<5%).

**Table 2.5**
**Occurrence, Distribution, and Selection of Chemicals of Potential Concern**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Sediment (0-0.5) |
| Exposure Medium: | Sediment from Bridgewood Lake |

| Exposure Point | Chemical Group | CAS Number | Chemical | Minimum Detected Concentration (Qualifier) (1) | Maximum Detected Concentration (Qualifier) (1) | Units | Location of Maximum Concentration | Detection Frequency | Range of Detection Limits | Concentration Used for Screening (2) | Background Value (3) | Screening Criteria (4) | Criteria Basis (4) | Exceeds Crit | COPC Flag (Y/N) | Rationale for Selection or Deletion (5) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BWL | METALS | 7429-90-5 | ALUMINUM | 266 | 28000(J) | MG/KG | BWDD0018 | 59/59 | 6-69.6 | 28000 | 12000 | 7700 | EPA RSL (n) | 42 | Yes | ASL |
| BWL | METALS | 7440-36-0 | ANTIMONY | 1.9(J) | 38.1(J) | MG/KG | BWDD0014 | 26/59 | 0.26-13.1 | 38.1 | 1.7 | 3.1 | EPA RSL (n, Antimony (metallic)) | 25 | Yes | ASL |
| BWL | METALS | 7440-38-2 | ARSENIC | 2.2(J) | 1070(J) | MG/KG | BWDD0018 | 62/62 | 0.15-14.1 | 1070 | 15.2 | 0.68 | EPA RSL (c) | 62 | Yes | ASL |
| BWL | METALS | 7440-39-3 | BARIUM | 5.2(J) | 858(J) | MG/KG | BWDD0038 | 61/62 | 0.31-26.2 | 858 | 195 | 1500 | EPA RSL (n) | 0 | No | BSL |
| BWL | METALS | 7440-41-7 | BERYLLIUM | 0.065(J) | 2.7(J) | MG/KG | BWDD0018; BWDD0043 | 56/62 | 0.012-0.65 | 2.7 | 0.96 | 16 | EPA RSL (n) | 0 | No | BSL |
| BWL | METALS | 7440-43-9 | CADMIUM | 0.18(J) | 38.7(J) | MG/KG | BWDD0018 | 59/62 | 0.02-0.72 | 38.7 | 3.1 | 7.1 | EPA RSL (n, Cadmium (Diet)) | 38 | Yes | ASL |
| BWL | METALS | 7440-70-2 | CALCIUM | 172(J) | 11300(J) | MG/KG | BWDD0053 | 61/62 | 2.4-655 | 11300 | 3690 | | EN | | No | EN |
| BWL | METALS | 7440-47-3 | CHROMIUM | 1.1(J) | 395(J) | MG/KG | BWDD0018 | 62/62 | 0.034-2.1 | 395 | 33.6 | 0.3 | EPA RSL (c, Chromium(VI)) | 62 | Yes | ASL |
| BWL | METALS | 7440-48-4 | COBALT | 0.42(J) | 34.3(J) | MG/KG | BWDD0018 | 59/62 | 0.05-6.5 | 34.3 | 15.3 | 2.3 | EPA RSL (n) | 52 | Yes | ASL |
| BWL | METALS | 7440-50-8 | COPPER | 0.59(J) | 566(J) | MG/KG | BWDD0018 | 62/62 | 0.1-6.5 | 566 | 48.3 | 310 | EPA RSL (n) | 5 | Yes | ASL |
| BWL | METALS | 57-12-5 | CYANIDE | 0.96(J) | 198(J) | MG/KG | BWDD0018 | 22/51 | 0.41-38.5 | 198 | 0.2 | 2.3 | EPA RSL (n, Cyanide (CN-)) | 19 | Yes | ASL |
| BWL | METALS | 7439-89-6 | IRON | 577 | 163000(J) | MG/KG | BWDD0042 | 62/62 | 1.8-77.5 | 163000 | 18200 | 5500 | EPA RSL (n) | 56 | Yes | ASL |
| BWL | METALS | 7439-92-1 | LEAD | 4.7 | 5840(J) | MG/KG | BWDD0014 | 60/60 | 0.2-8.3 | 5840 | 240 | 400 | EPA RSL (L, Lead and Compounds) | 49 | Yes | ASL |
| BWL | METALS | 7439-95-4 | MAGNESIUM | 37.7(J) | 1700(J) | MG/KG | BWDD0048 | 59/62 | 2.7-655 | 1700 | 590 | | EN | | No | EN |
| BWL | METALS | 7439-96-5 | MANGANESE | 4 | 569(J) | MG/KG | BWDD0049 | 62/62 | 0.013-2 | 569 | 111 | 180 | EPA RSL (n, Manganese (Non-diet)) | 4 | Yes | ASL |
| BWL | METALS | 7439-97-6 | MERCURY | 0.13 | 0.99(J) | MG/KG | BWDD0026 | 39/59 | 0.054-0.63 | 0.99 | 0.525 | 2.3 | EPA RSL (n, Mercuric Chloride (and other Mercury salts)) | 0 | No | BSL |
| BWL | METALS | 7440-02-0 | NICKEL | 1.2(J) | 50.6(J) | MG/KG | BWDD0018 | 60/62 | 0.055-5.2 | 50.6 | 21.4 | 150 | EPA RSL (n, Nickel Soluble Salts) | 0 | No | BSL |
| BWL | METALS | 7440-09-7 | POTASSIUM | 41.7(J) | 603(J) | MG/KG | BWDD0010 | 8/59 | 9.9-1650 | 603 | 480 | | EN | | No | EN |
| BWL | METALS | 7782-49-2 | SELENIUM | 1.9(J) | 13.7(J) | MG/KG | BWDD0037 | 5/59 | 0.29-11.2 | 13.7 | 2.1 | 39 | EPA RSL (n) | 0 | No | BSL |
| BWL | METALS | 7440-23-5 | SODIUM | 6.9(J) | 3410(J) | MG/KG | BWDD0043 | 11/59 | 1.8-1120 | 3410 | 414 | | EN | | No | EN |
| BWL | METALS | 7440-62-2 | VANADIUM | 2(J) | 78.8(J) | MG/KG | BWDD0018 | 61/62 | 0.077-6.6 | 78.8 | 37.1 | 39 | EPA RSL (n, Vanadium and Compounds) | 36 | Yes | ASL |
| BWL | METALS | 7440-66-6 | ZINC | 9.9(J) | 2540(J) | MG/KG | BWDD0019 | 62/62 | 0.021-7.9 | 2540 | 361 | 2300 | EPA RSL (n) | 3 | Yes | ASL |
| BWL | PEST/PCB | 72-54-8 | 4,4'-DDD | 0.0042(J) | 0.081(J) | MG/KG | BWDD0026 | 44/55 | 0.0039-0.044 | 0.081 | 0.0031 | 0.19 | EPA RSL (n) | 0 | No | BSL |
| BWL | PEST/PCB | 72-55-9 | 4,4'-DDE | 0.0036(J) | 0.14(J) | MG/KG | BWDD0050 | 42/55 | 0.0039-0.044 | 0.14 | 0.0027 | 2 | EPA RSL (c) | 0 | No | BSL |
| BWL | PEST/PCB | 50-29-3 | 4,4'-DDT | 0.012(J) | 0.0165(J+) | MG/KG | BWDD0044 | 4/54 | 0.0039-0.03 | 0.0165 | 0.001 | 1.9 | EPA RSL (c) | 0 | No | BSL |
| BWL | PEST/PCB | 5103-71-9 | ALPHA-CHLORDANE | 0.0053(J) | 0.02425(J+) | MG/KG | BWDD0044 | 5/54 | 0.002-0.015 | 0.02425 | 0.0014 | 0.2 | NJ RDCSRS (c) | 0 | No | BSL |
| BWL | PEST/PCB | 11097-69-1 | AROCLOR-1254 | 0.24(J) | 0.38(J) | MG/KG | BWDD0046 | 4/54 | 0.039-0.3 | 0.38 | 0.042 | 0.12 | EPA RSL (n) | 4 | Yes | ASL |
| BWL | PEST/PCB | 11096-82-5 | AROCLOR-1260 | 0.031(J) | 0.2(J) | MG/KG | BWDD0014 | 12/54 | 0.039-0.3 | 0.2 | 0.03435 | 0.12 | EPA RSL (n, Aroclor 1254) | 7 | Yes | ASL |
| BWL | PEST/PCB | 319-85-7 | BETA-BHC | 0.0025(J) | 0.02(J) | MG/KG | BWDD0051 | 4/42 | 0.002-0.015 | 0.02 | | 0.3 | EPA RSL (c) | 0 | No | BSL |
| BWL | PEST/PCB | 319-86-8 | DELTA-BHC | 0.0076(J) | 0.0076(J) | MG/KG | BWDD0047 | 1/54 | 0.002-0.015 | 0.0076 | 0.00164 | 0.3 | EPA RSL (c, Hexachlorocyclohexane, Beta-) | 0 | No | BSL |
| BWL | PEST/PCB | 53494-70-5 | ENDRIN KETONE | 0.0098 | 0.014(J) | MG/KG | BWDD0001 | 2/54 | 0.0039-0.03 | 0.014 | | 1.9 | EPA RSL (n, Endrin) | 0 | No | BSL |
| BWL | PEST/PCB | 58-89-9 | GAMMA-BHC (LINDANE) | 0.004875(J) | 0.019(J) | MG/KG | BWDD0021 | 13/54 | 0.002-0.015 | 0.019 | | 0.4 | NJ RDCSRS (c) | 0 | No | BSL |
| BWL | PEST/PCB | 5103-74-2 | GAMMA-CHLORDANE | 0.0049(J) | 0.013(J) | MG/KG | BWDD0048 | 9/54 | 0.002-0.015 | 0.013 | 0.00052 | 0.2 | NJ RDCSRS (c) | 0 | No | BSL |
| BWL | PEST/PCB | 1024-57-3 | HEPTACHLOR EPOXIDE | 0.004175(J) | 0.0084(J) | MG/KG | BWDD0035 | 5/53 | 0.002-0.015 | 0.0084 | | 0.07 | EPA RSL (c) | 0 | No | BSL |
| BWL | SVOC | 91-57-6 | 2-METHYLNAPHTHALENE | 0.041(J) | 0.082(J) | MG/KG | BWDD0004 | 2/54 | 0.39-3 | 0.082 | 0.0016 | 24 | EPA RSL (n) | 0 | No | BSL |
| BWL | SVOC | 106-44-5 | 4-METHYLPHENOL | 0.13(J) | 0.87(J) | MG/KG | BWDD0010 | 3/54 | 0.39-3 | 0.87 | | 31 | NJ RDCSRS (n) | 0 | No | BSL |
| BWL | SVOC | 83-32-9 | ACENAPHTHENE | 0.04(J) | 0.97 | MG/KG | BWDD0003 | 8/54 | 0.39-3 | 0.97 | 0.01 | 360 | EPA RSL (n) | 0 | No | BSL |
| BWL | SVOC | 208-96-8 | ACENAPHTHYLENE | 0.034(J) | 0.21(J) | MG/KG | BWDD0001 | 5/54 | 0.39-3 | 0.21 | | 360 | EPA RSL (n, Acenaphthene) | 0 | No | BSL |
| BWL | SVOC | 98-86-2 | ACETOPHENONE | 0.028(J) | 0.035(J) | MG/KG | BWDD0059 | 2/54 | 0.39-3 | 0.035 | 0.1295 | 2 | NJ RDCSRS (n) | 0 | No | BSL |
| BWL | SVOC | 120-12-7 | ANTHRACENE | 0.056(J) | 1.6 | MG/KG | BWDD0003 | 30/54 | 0.39-3 | 1.6 | 0.025 | 1800 | EPA RSL (n) | 0 | No | BSL |
| BWL | SVOC | 100-52-7 | BENZALDEHYDE | 0.085(J) | 1.7(J+) | MG/KG | BWDD0053 | 18/57 | 0.39-4.7 | 1.7 | 0.19 | 170 | EPA RSL (c) | 0 | No | BSL |
| BWL | SVOC | 56-55-3 | BENZO(A)ANTHRACENE | 0.061(J) | 6.5(J) | MG/KG | BWDD0001 | 56/58 | 0.39-4.7 | 6.5 | 0.19 | 1.1 | EPA RSL (c) | 4 | Yes | ASL |
| BWL | SVOC | 50-32-8 | BENZO(A)PYRENE | 0.082(J) | 6.2(J) | MG/KG | BWDD0001 | 56/58 | 0.39-4.7 | 6.2 | 0.18 | 0.11 | EPA RSL (c) | 53 | Yes | ASL |
| BWL | SVOC | 205-99-2 | BENZO(B)FLUORANTHENE | 0.089(J) | 9.9(J) | MG/KG | BWDD0001 | 56/58 | 0.39-4.7 | 9.9 | 0.27 | 1.1 | EPA RSL (c) | 15 | Yes | ASL |
| BWL | SVOC | 191-24-2 | BENZO(G,H,I)PERYLENE | 0.061(J) | 4.1(J) | MG/KG | BWDD0001 | 49/56 | 0.39-4.7 | 4.1 | 0.14 | 180 | EPA RSL (n, Pyrene) | 0 | No | BSL |
| BWL | SVOC | 207-08-9 | BENZO(K)FLUORANTHENE | 0.074(J) | 9.7(J) | MG/KG | BWDD0001 | 56/58 | 0.39-4.7 | 9.7 | 0.22 | 11 | EPA RSL (c) | 0 | No | BSL |
| BWL | SVOC | 85-68-7 | BENZYL BUTYL PHTHALATE | 0.75(J) | 0.75(J) | MG/KG | BWDD0049 | 1/54 | 0.39-3 | 0.75 | 0.162 | 290 | EPA RSL (c) | 0 | No | BSL |
| BWL | SVOC | 111-44-4 | BIS(2-CHLOROETHYL)ETHER | 0.25(J) | 0.25(J) | MG/KG | BWDD0051 | 1/54 | 0.39-3 | 0.25 | | 0.23 | EPA RSL (c) | 1 | No | LDF |
| BWL | SVOC | 117-81-7 | BIS(2-ETHYLHEXYL) PHTHALATE | 0.028(J) | 3.2(J) | MG/KG | BWDD0049 | 35/58 | 0.39-4.7 | 3.2 | 0.29 | 35 | NJ RDCSRS (c) | 0 | No | BSL |
| BWL | SVOC | 86-74-8 | CARBAZOLE | 0.061(J) | 0.415(J+) | MG/KG | BWDD0044 | 15/54 | 0.39-3 | 0.415 | | 24 | NJ RDCSRS (c) | 0 | No | BSL |
| BWL | SVOC | 218-01-9 | CHRYSENE | 0.02(J) | 12(J) | MG/KG | BWDD0001 | 57/58 | 0.39-4.7 | 12 | 0.24 | 110 | EPA RSL (c) | 0 | No | BSL |
| BWL | SVOC | 53-70-3 | DIBENZO(A,H)ANTHRACENE | 0.064(J) | 1(J) | MG/KG | BWDD0001 | 21/54 | 0.39-3 | 1 | 0.043 | 0.11 | EPA RSL (c) | 15 | Yes | ASL |
| BWL | SVOC | 132-64-9 | DIBENZOFURAN | 0.034(J) | 0.22(J) | MG/KG | BWDD0003 | 5/54 | 0.39-3 | 0.22 | | 7.3 | EPA RSL (n) | 0 | No | BSL |
| BWL | SVOC | 84-74-2 | DI-N-BUTYLPHTHALATE | 0.046(J) | 0.82(J) | MG/KG | BWDD0049 | 12/55 | 0.39-4.4 | 0.82 | 0.0155 | 630 | EPA RSL (n) | 0 | No | BSL |
| BWL | SVOC | 117-84-0 | DI-N-OCTYLPHTHALATE | 0.041(J) | 0.8(J) | MG/KG | BWDD0034 | 2/52 | 0.39-3 | 0.8 | 0.33 | 63 | EPA RSL (n) | 0 | No | BSL |
| BWL | SVOC | 206-44-0 | FLUORANTHENE | 0.043(J) | 14 | MG/KG | BWDD0003 | 57/58 | 0.39-4.7 | 14 | 0.42 | 240 | EPA RSL (n) | 0 | No | BSL |
| BWL | SVOC | 86-73-7 | FLUORENE | 0.056(J) | 0.6(J) | MG/KG | BWDD0003 | 11/54 | 0.39-3 | 0.6 | 0.00255 | 240 | EPA RSL (n) | 0 | No | BSL |
| BWL | SVOC | 193-39-5 | INDENO(1,2,3-CD)PYRENE | 0.052(J) | 3.8(J) | MG/KG | BWDD0001 | 50/56 | 0.39-4.7 | 3.8 | 0.15 | 1.1 | EPA RSL (c) | 2 | Yes | ASL |
| BWL | SVOC | 91-20-3 | NAPHTHALENE | 0.064(J) | 25(J) | MG/KG | BWDD0025 | 14/54 | 0.39-3 | 25 | 0.0016 | 3.8 | EPA RSL (c) | 2 | Yes | ASL |
| BWL | SVOC | 85-01-8 | PHENANTHRENE | 0.025(J) | 3.4(J) | MG/KG | BWDD0004 | 57/58 | 0.39-4.7 | 3.4 | 0.2 | 1800 | EPA RSL (n, Anthracene) | 0 | No | BSL |
| BWL | SVOC | 108-95-2 | PHENOL | 0.048(J) | 0.048(J) | MG/KG | BWDD0001 | 1/54 | 0.39-3 | 0.048 | 0.306 | 1900 | EPA RSL (n) | 0 | No | BSL |
| BWL | SVOC | 129-00-0 | PYRENE | 0.029(J) | 8.2(J) | MG/KG | BWDD0001 | 57/58 | 0.39-4.7 | 8.2 | 0.37 | 180 | EPA RSL (n) | 0 | No | BSL |
| BWL | VOC | 95-50-1 | 1,2-DICHLOROBENZENE | 0.017(J) | 0.024(J) | MG/KG | BWDD0048 | 3/54 | 0.01-0.18 | 0.024 | | 180 | EPA RSL (n) | 0 | No | BSL |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Sediment (0-0.5) |
| Exposure Medium: | Sediment from Bridgewood Lake |

| Exposure Point | Chemical Group | CAS Number | Chemical | Minimum Detected Concentration (Qualifier) (1) | Maximum Detected Concentration (Qualifier) (1) | Units | Location of Maximum Concentration | Detection Frequency | Range of Detection Limits | Concentration Used for Screening (2) | Background Value (3) | Screening Criteria (4) | Criteria Basis (4) | Exceeds Crit | COPC Flag (Y/N) | Rationale for Selection or Deletion (5) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BWL | VOC | 541-73-1 | 1,3-DICHLOROBENZENE | 0.042(J) | 0.062(J) | MG/KG | BWDD0008 | 3/54 | 0.01-0.18 | 0.062 | | 2.6 | EPA RSL (c, 1,4-Dichlorobenzene) | 0 | No | BSL |
| BWL | VOC | 106-46-7 | 1,4-DICHLOROBENZENE | 0.008(J) | 0.024(J) | MG/KG | BWDD0008 | 4/54 | 0.01-0.18 | 0.024 | | 2.6 | EPA RSL (c) | 0 | No | BSL |
| BWL | VOC | 67-64-1 | ACETONE | 0.013 | 1.7(J) | MG/KG | BWDD0013 | 45/58 | 0.011-0.42 | 1.7 | 0.48 | 6100 | EPA RSL (n) | 0 | No | BSL |
| BWL | VOC | 75-15-0 | CARBON DISULFIDE | 0.005(J) | 0.056(J+) | MG/KG | BWDD0033 | 15/56 | 0.01-0.27 | 0.056 | 0.041 | 77 | EPA RSL (n) | 0 | No | BSL |
| BWL | VOC | 56-23-5 | CARBON TETRACHLORIDE | 0.019(J) | 0.019(J) | MG/KG | BWDD0009 | 1/54 | 0.01-0.18 | 0.019 | | 0.65 | EPA RSL (c) | 0 | No | BSL |
| BWL | VOC | 108-90-7 | CHLOROBENZENE | 0.061(J) | 0.11(J) | MG/KG | BWDD0007; BWDD0008 | 4/54 | 0.01-0.18 | 0.11 | | 28 | EPA RSL (n) | 0 | No | BSL |
| BWL | VOC | 67-66-3 | CHLOROFORM | 0.018(J) | 0.024(J) | MG/KG | BWDD0008 | 2/54 | 0.01-0.18 | 0.024 | | 0.32 | EPA RSL (c) | 0 | No | BSL |
| BWL | VOC | 74-87-3 | CHLOROMETHANE | 0.013(J) | 0.34(J) | MG/KG | BWDD0013 | 5/54 | 0.01-0.18 | 0.34 | | 4 | NJ RDCSRS | 0 | No | BSL |
| BWL | VOC | 110-82-7 | CYCLOHEXANE | 0.007(J) | 0.043 | MG/KG | BWDD0056 | 5/54 | 0.01-0.18 | 0.043 | | 650 | EPA RSL (n) | 0 | No | BSL |
| BWL | VOC | 75-09-2 | DICHLOROMETHANE | 0.016(J) | 0.016(J) | MG/KG | BWDD0046 | 1/54 | 0.01-0.18 | 0.016 | | 35 | EPA RSL (n) | 0 | No | BSL |
| BWL | VOC | 100-41-4 | ETHYLBENZENE | 0.035(J) | 0.058(J) | MG/KG | BWDD0008 | 4/54 | 0.01-0.18 | 0.058 | | 5.8 | EPA RSL (c) | 0 | No | BSL |
| BWL | VOC | 98-82-8 | ISOPROPYLBENZENE | 0.051 | 0.051 | MG/KG | BWDD0056 | 1/54 | 0.01-0.18 | 0.051 | | 190 | EPA RSL (n) | 0 | No | BSL |
| BWL | VOC | 79-20-9 | METHYL ACETATE | 0.004(J) | 1(J) | MG/KG | BWDD0013 | 14/54 | 0.01-0.18 | 1 | | 7800 | EPA RSL (n) | 0 | No | BSL |
| BWL | VOC | 78-93-3 | METHYL ETHYL KETONE | 0.006(J) | 0.47(J) | MG/KG | BWDD0013 | 52/57 | 0.01-0.27 | 0.47 | 0.36 | 2700 | EPA RSL (n) | 0 | No | BSL |
| BWL | VOC | 108-87-2 | METHYLCYCLOHEXANE | 0.015(J) | 0.2(J) | MG/KG | BWDD0043 | 8/54 | 0.01-0.18 | 0.2 | | 650 | EPA RSL (n, Cyclohexane) | 0 | No | BSL |
| BWL | VOC | 127-18-4 | TETRACHLOROETHENE | 0.15(J) | 0.23(J) | MG/KG | BWDD0008 | 4/54 | 0.01-0.18 | 0.23 | | 8.1 | EPA RSL (n) | 0 | No | BSL |
| BWL | VOC | 108-88-3 | TOLUENE | 0.001(J) | 0.12(J) | MG/KG | BWDD0013 | 8/55 | 0.01-0.27 | 0.12 | 0.0054 | 490 | EPA RSL (n) | 0 | No | BSL |
| BWL | VOC | 79-01-6 | TRICHLOROETHYLENE (TCE) | 0.28(J) | 0.5(J) | MG/KG | BWDD0007 | 4/54 | 0.01-0.18 | 0.5 | | 0.41 | EPA RSL (n) | 2 | Yes | ASL |
| BWL | VOC | 1330-20-7 | XYLENES (TOTAL) | 0.005(J) | 0.18(J) | MG/KG | BWDD0008 | 10/54 | 0.01-0.18 | 0.18 | | 58 | EPA RSL (n) | 0 | No | BSL |

Notes:

Only analytes detected in at least one sample are presented.

(1) J – Estimated. + – Value is the average of a parent sample and a field duplicate sample. B – Analyte was detected in an associated blank sample.

(2) The maximum detected concentration was used for the screening.

(3) Maximum detected concentrations from samples collected from Clement Lake (Gradient, 2018).

(4) All compounds were screened against the lower of the EPA (2017e) Regional Screening Level (RSL) for residential soil (THQ = 0.1; Target Cancer Risk = $10^{-6}$) and New Jersey Residential Direct Contact Soil Remediation Standards (NJ RDCSRS) (NJDEP, 2017).

(n) – Non-cancer. (Surrogate/form) – Surrogate/chemical form used in the absence of chemical-specific screening value.

(c) – Cancer.

(L) – Based on blood lead modeling.

(5) Rationale codes:

Selection reason: ASL – Above screening level.

Deletion reason: BSL – Below screening level.

EN – Essential human nutrient.

LDF – Low detection frequency (<5%).

**Table 2.6**
**Occurrence, Distribution, and Selection of Chemicals of Potential Concern**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Sediment (0-0.5) |
| Exposure Medium: | Sediment from Hilliards Creek |

| Exposure Point | Chemical Group | CAS Number | Chemical | Minimum Detected Concentration (Qualifier) (1) | Maximum Detected Concentration (Qualifier) (1) | Units | Location of Maximum Concentration | Detection Frequency | Range of Detection Limits | Concentration Used for Screening (2) | Background Value (3) | Screening Criteria (4) | Criteria Basis (4) | Exceeds Crit | COPC Flag (Y/N) | Rationale for Selection or Deletion (5) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HC | METALS | 7429-90-5 | ALUMINUM | 737 | 30900(J) | MG/KG | HCDD0064 | 122/122 | 4.3-106 | 30900 | 23100 | 7700 | EPA RSL (n) | 44 | Yes | ASL |
| HC | METALS | 7440-36-0 | ANTIMONY | 0.825(J) | 16.6(J) | MG/KG | HCDD0077 | 35/122 | 0.675-13.8 | 16.6 | | 3.1 | EPA RSL (n, Antimony (metallic)) | 19 | Yes | ASL |
| HC | METALS | 7440-38-2 | ARSENIC | 3.6(J) | 4460(J) | MG/KG | HCDD0060 | 115/116 | 0.69-7.3 | 4460 | 13.5 | 0.68 | EPA RSL (c) | 115 | Yes | ASL |
| HC | METALS | 7440-39-3 | BARIUM | 19.2(J) | 7950(J) | MG/KG | HCDD0020 | 122/122 | 0.45-21.3 | 7950 | 182.5 | 1500 | EPA RSL (n) | 13 | Yes | ASL |
| HC | METALS | 7440-41-7 | BERYLLIUM | 0.05(J) | 2(J) | MG/KG | HCDD0068 | 113/122 | 0.02-0.55 | 2 | 1.15 | 16 | EPA RSL (n) | 0 | No | BSL |
| HC | METALS | 7440-43-9 | CADMIUM | 0.14(J) | 17.1(J) | MG/KG | HCDD0057 | 119/122 | 0.06-0.73 | 17.1 | 2.15 | 7.1 | EPA RSL (n, Cadmium (Diet)) | 15 | Yes | ASL |
| HC | METALS | 7440-70-2 | CALCIUM | 266(J) | 14300(J) | MG/KG | HCDD0020 | 122/122 | 15.3-546 | 14300 | 3920 | | EN | | No | EN |
| HC | METALS | 7440-47-3 | CHROMIUM | 3.8 | 3430(J) | MG/KG | HCDD0020 | 122/122 | 0.14-2.2 | 3430 | 31.6 | 0.3 | EPA RSL (c, Chromium(VI)) | 122 | Yes | ASL |
| HC | METALS | 7440-48-4 | COBALT | 0.565(J) | 13.5(J) | MG/KG | HCDD0128 | 115/122 | 0.21-6.2 | 13.5 | 3.55 | 2.3 | EPA RSL (n) | 67 | Yes | ASL |
| HC | METALS | 7440-50-8 | COPPER | 1.9(J) | 1400(J) | MG/KG | HCDD0060 | 118/118 | 0.21-5.1 | 1400 | 57.7 | 310 | EPA RSL (n) | 11 | Yes | ASL |
| HC | METALS | 57-12-5 | CYANIDE | 0.69(J) | 360(J) | MG/KG | HCDD0077 | 79/122 | 0.035-148 | 360 | | 2.3 | EPA RSL (n, Cyanide (CN-)) | 57 | Yes | ASL |
| HC | METALS | 7439-89-6 | IRON | 1500 | 46200(J) | MG/KG | HCDD0121 | 122/122 | 4.1-59.4 | 46200 | 19500 | 5500 | EPA RSL (n) | 85 | Yes | ASL |
| HC | METALS | 7439-92-1 | LEAD | 12.9 | 39200(J) | MG/KG | HCDD0020 | 122/122 | 0.37-26.8 | 39200 | 157 | 400 | EPA RSL (L, Lead and Compounds) | 72 | Yes | ASL |
| HC | METALS | 7439-95-4 | MAGNESIUM | 61.6(J) | 5540(J) | MG/KG | HCDD0147 | 114/122 | 12-7580 | 5540 | 580 | | EN | | No | EN |
| HC | METALS | 7439-96-5 | MANGANESE | 7.6(J) | 323(J) | MG/KG | HCDD0121 | 122/122 | 0.05-1.7 | 323 | 107 | 180 | EPA RSL (n, Manganese (Non-diet)) | 6 | Yes | ASL |
| HC | METALS | 7439-97-6 | MERCURY | 0.059(J) | 1.9(J) | MG/KG | HCDD0021 | 66/122 | 0.035-0.46 | 1.9 | 72.9 | 2.3 | EPA RSL (n, Mercuric Chloride (and other Mercury salts)) | 0 | No | BSL |
| HC | METALS | 7440-02-0 | NICKEL | 0.935(J) | 549(J) | MG/KG | HCDD0109 | 122/122 | 0.21-4 | 549 | 8.15 | 150 | EPA RSL (n, Nickel Soluble Salts) | 1 | Yes | ASL |
| HC | METALS | 7440-09-7 | POTASSIUM | 65(J) | 2670(J) | MG/KG | HCDD0068 | 66/122 | 17-1730 | 2670 | 104 | | EN | | No | EN |
| HC | METALS | 7782-49-2 | SELENIUM | 0.7325(J) | 8.2(J) | MG/KG | HCDD0058 | 32/122 | 0.675-8.6 | 8.2 | 4.1 | 39 | EPA RSL (n) | 0 | No | BSL |
| HC | METALS | 7440-22-4 | SILVER | 0.225(J) | 3.4(J) | MG/KG | HCDD0128 | 13/122 | 0.21-3.9 | 3.4 | 0.54 | 39 | EPA RSL (n) | 0 | No | BSL |
| HC | METALS | 7440-23-5 | SODIUM | 73.5(J) | 932(J) | MG/KG | HCDD0004 | 23/122 | 29-1170 | 932 | 487.25 | | EN | | No | EN |
| HC | METALS | 7440-28-0 | THALLIUM | 3.1(J) | 9.9(J) | MG/KG | HCDD0077 | 8/122 | 0.92-15.6 | 9.9 | | 0.078 | EPA RSL (n, Thallium (Soluble Salts)) | 8 | Yes | ASL |
| HC | METALS | 7440-62-2 | VANADIUM | 2.6(J) | 81.2(J) | MG/KG | HCDD0061 | 122/122 | 0.21-7 | 81.2 | 53.3 | 39 | EPA RSL (n, Vanadium and Compounds) | 10 | Yes | ASL |
| HC | METALS | 7440-66-6 | ZINC | 4.45(J) | 2770(J) | MG/KG | HCDD0059 | 106/106 | 0.175-7.9 | 2770 | 83.35 | 2300 | EPA RSL (n) | 1 | Yes | ASL |
| HC | PEST/PCB | 72-54-8 | 4,4'-DDD | 0.0043(J) | 0.079(J) | MG/KG | HCDD0061 | 35/62 | 0.0039-0.03 | 0.079 | 0.022 | 0.19 | EPA RSL (n) | 0 | No | BSL |
| HC | PEST/PCB | 72-55-9 | 4,4'-DDE | 0.0021(J) | 0.0595(J+) | MG/KG | HCDD0070 | 26/62 | 0.0039-0.03 | 0.0595 | 0.0205 | 2 | EPA RSL (c) | 0 | No | BSL |
| HC | PEST/PCB | 50-29-3 | 4,4'-DDT | 0.0023(J) | 0.011(J) | MG/KG | HCDD0071 | 7/61 | 0.0039-0.03 | 0.011 | 0.001955 | 1.9 | EPA RSL (c) | 0 | No | BSL |
| HC | PEST/PCB | 5103-71-9 | ALPHA-CHLORDANE | 0.00115(J) | 0.05(J+) | MG/KG | HCDD0063 | 33/62 | 0.002-0.015 | 0.05 | | 0.2 | NJ RDCSRS (c) | 0 | No | BSL |
| HC | PEST/PCB | 11097-69-1 | AROCLOR-1254 | 0.0215(J) | 1.3(J) | MG/KG | HCDD0128 | 42/122 | 0.0185-0.3 | 1.3 | | 0.12 | EPA RSL (n) | 27 | Yes | ASL |
| HC | PEST/PCB | 11096-82-5 | AROCLOR-1260 | 0.027 | 0.29(J) | MG/KG | HCDD0128 | 37/122 | 0.0185-0.3 | 0.29 | 0.031 | 0.12 | EPA RSL (n, Aroclor 1254) | 10 | Yes | ASL |
| HC | PEST/PCB | 319-85-7 | BETA-BHC | 0.0018(J) | 0.011(J) | MG/KG | HCDD0061 | 5/59 | 0.002-0.015 | 0.011 | | 0.3 | EPA RSL (c) | 0 | No | BSL |
| HC | PEST/PCB | 60-57-1 | DIELDRIN | 0.0034(J) | 0.016(J+) | MG/KG | HCDD0063 | 5/62 | 0.0039-0.03 | 0.016 | | 0.034 | EPA RSL (c) | 0 | No | BSL |
| HC | PEST/PCB | 33213-65-9 | ENDOSULFAN II | 0.003(J) | 0.003(J) | MG/KG | HCDD0075 | 1/62 | 0.0039-0.03 | 0.003 | | 47 | EPA RSL (n, Endosulfan) | 0 | No | BSL |
| HC | PEST/PCB | 7421-93-4 | ENDRIN ALDEHYDE | 0.0033(J) | 0.0067(J) | MG/KG | HCDD0019 | 3/62 | 0.0039-0.03 | 0.0067 | 0.00056 | 1.9 | EPA RSL (n, Endrin) | 0 | No | BSL |
| HC | PEST/PCB | 53494-70-5 | ENDRIN KETONE | 0.0032(J) | 0.0032(J) | MG/KG | HCDD0011 | 1/62 | 0.0039-0.03 | 0.0032 | 0.00114 | 1.9 | EPA RSL (n, Endrin) | 0 | No | BSL |
| HC | PEST/PCB | 58-89-9 | GAMMA-BHC (LINDANE) | 0.0013(J) | 0.0013(J) | MG/KG | HCDD0004 | 1/62 | 0.002-0.015 | 0.0013 | | 0.4 | NJ RDCSRS (c) | 0 | No | BSL |
| HC | PEST/PCB | 5103-74-2 | GAMMA-CHLORDANE | 0.0012(J) | 0.0375(J+) | MG/KG | HCDD0063 | 31/62 | 0.002-0.015 | 0.0375 | 0.000097 | 0.2 | NJ RDCSRS (c) | 0 | No | BSL |
| HC | PEST/PCB | 1024-57-3 | HEPTACHLOR EPOXIDE | 0.0012(J) | 0.0084(J+) | MG/KG | HCDD0070 | 6/62 | 0.002-0.015 | 0.0084 | | 0.07 | EPA RSL (c) | 0 | No | BSL |
| HC | SVOC | 92-52-4 | 1,1'-BIPHENYL | 0.023(J) | 0.11(J) | MG/KG | HCDD0027 | 4/62 | 0.39-3 | 0.11 | 0.012 | 4.7 | EPA RSL (n) | 0 | No | BSL |
| HC | SVOC | 91-57-6 | 2-METHYLNAPHTHALENE | 0.025(J) | 0.43(J) | MG/KG | HCDD0027 | 8/62 | 0.39-3 | 0.43 | 0.036 | 24 | EPA RSL (n) | 0 | No | BSL |
| HC | SVOC | 106-47-8 | 4-CHLOROANILINE | 0.1(J) | 0.33(J) | MG/KG | HCDD0061 | 2/62 | 0.39-3 | 0.33 | | 2.7 | EPA RSL (c) | 0 | No | BSL |
| HC | SVOC | 106-44-5 | 4-METHYLPHENOL | 0.1(J) | 0.15(J) | MG/KG | HCDD0027 | 2/62 | 0.39-3 | 0.15 | | 31 | NJ RDCSRS (n) | 0 | No | BSL |
| HC | SVOC | 83-32-9 | ACENAPHTHENE | 0.028(J) | 1.3 | MG/KG | HCDD0027 | 43/121 | 0.38-3 | 1.3 | 0.21 | 360 | EPA RSL (n) | 0 | No | BSL |
| HC | SVOC | 208-96-8 | ACENAPHTHYLENE | 0.04(J) | 0.25(J) | MG/KG | HCDD0076 | 3/121 | 0.38-3 | 0.25 | 0.000705 | 360 | EPA RSL (n, Acenaphthene) | 0 | No | BSL |
| HC | SVOC | 98-86-2 | ACETOPHENONE | 0.019(J) | 0.12(J) | MG/KG | HCDD0030 | 7/62 | 0.39-3 | 0.12 | 0.082 | 2 | NJ RDCSRS (n) | 0 | No | BSL |
| HC | SVOC | 120-12-7 | ANTHRACENE | 0.026(J) | 1.7(J) | MG/KG | HCDD0089 | 62/121 | 0.38-3 | 1.7 | 0.37 | 1800 | EPA RSL (n) | 0 | No | BSL |
| HC | SVOC | 100-52-7 | BENZALDEHYDE | 0.028(J) | 1.6(J) | MG/KG | HCDD0068 | 36/62 | 0.39-3 | 1.6 | 0.96 | 170 | EPA RSL (c) | 0 | No | BSL |
| HC | SVOC | 56-55-3 | BENZO(A)ANTHRACENE | 0.027(J) | 6 | MG/KG | HCDD0089 | 107/121 | 0.38-3 | 6 | 0.81 | 1.1 | EPA RSL (c) | 11 | Yes | ASL |
| HC | SVOC | 50-32-8 | BENZO(A)PYRENE | 0.028(J) | 5 | MG/KG | HCDD0089 | 108/120 | 0.38-3 | 5 | 0.65 | 0.11 | EPA RSL (c) | 96 | Yes | ASL |
| HC | SVOC | 205-99-2 | BENZO(B)FLUORANTHENE | 0.03(J) | 4.6 | MG/KG | HCDD0089 | 109/120 | 0.38-3 | 4.6 | 0.61 | 1.1 | EPA RSL (c) | 15 | Yes | ASL |
| HC | SVOC | 191-24-2 | BENZO(G,H,I)PERYLENE | 0.03(J) | 2.7(J) | MG/KG | HCDD0007 | 99/120 | 0.38-3 | 2.7 | 0.3345 | 180 | EPA RSL (n, Pyrene) | 0 | No | BSL |
| HC | SVOC | 207-08-9 | BENZO(K)FLUORANTHENE | 0.027(J) | 4.8 | MG/KG | HCDD0089 | 109/120 | 0.38-3 | 4.8 | 0.68 | 11 | EPA RSL (c) | 0 | No | BSL |
| HC | SVOC | 85-68-7 | BENZYL BUTYL PHTHALATE | 0.074(J) | 0.46(J) | MG/KG | HCDD0072 | 10/61 | 0.39-3 | 0.46 | | 290 | EPA RSL (c) | 0 | No | BSL |
| HC | SVOC | 117-81-7 | BIS(2-ETHYLHEXYL) PHTHALATE | 0.025(J) | 6.25(J+) | MG/KG | HCDD0070 | 48/62 | 0.39-3 | 6.25 | 0.3695 | 35 | NJ RDCSRS (c) | 0 | No | BSL |
| HC | SVOC | 86-74-8 | CARBAZOLE | 0.027(J) | 0.53(J) | MG/KG | HCDD0007 | 30/62 | 0.39-3 | 0.53 | 0.22 | 24 | NJ RDCSRS (c) | 0 | No | BSL |
| HC | SVOC | 218-01-9 | CHRYSENE | 0.029(J) | 6.6 | MG/KG | HCDD0089 | 114/121 | 0.38-3 | 6.6 | 0.81 | 110 | EPA RSL (c) | 0 | No | BSL |
| HC | SVOC | 53-70-3 | DIBENZO(A,H)ANTHRACENE | 0.031(J) | 1.297(J+) | MG/KG | HCDD0092 | 63/120 | 0.38-3 | 1.297 | 0.12 | 0.11 | EPA RSL (c) | 33 | Yes | ASL |
| HC | SVOC | 132-64-9 | DIBENZOFURAN | 0.024(J) | 0.89 | MG/KG | HCDD0027 | 12/62 | 0.39-3 | 0.89 | 0.029 | 7.3 | EPA RSL (n) | 0 | No | BSL |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Sediment (0-0.5) |
| Exposure Medium: | Sediment from Hilliards Creek |

| Exposure Point | Chemical Group | CAS Number | Chemical | Minimum Detected Concentration (Qualifier) (1) | Maximum Detected Concentration (Qualifier) (1) | Units | Location of Maximum Concentration | Detection Frequency | Range of Detection Limits | Concentration Used for Screening (2) | Background Value (3) | Screening Criteria (4) | Criteria Basis (4) | Exceeds Crit | COPC Flag (Y/N) | Rationale for Selection or Deletion (5) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HC | SVOC | 84-74-2 | DI-N-BUTYLPHTHALATE | 0.021(J) | 0.123(J+) | MG/KG | HCDD0033 | 10/62 | 0.39-3 | 0.123 | | 630 | EPA RSL (n) | 0 | No | BSL |
| HC | SVOC | 206-44-0 | FLUORANTHENE | 0.03(J) | 8.9 | MG/KG | HCDD0089 | 115/121 | 0.38-3 | 8.9 | 1.7 | 240 | EPA RSL (n) | 0 | No | BSL |
| HC | SVOC | 86-73-7 | FLUORENE | 0.019(J) | 1.3 | MG/KG | HCDD0027 | 55/121 | 0.38-3 | 1.3 | 0.18 | 240 | EPA RSL (n) | 0 | No | BSL |
| HC | SVOC | 193-39-5 | INDENO(1,2,3-CD)PYRENE | 0.031(J) | 2.6(J) | MG/KG | HCDD0089 | 100/120 | 0.38-3 | 2.6 | 0.332 | 1.1 | EPA RSL (c) | 4 | Yes | ASL |
| HC | SVOC | 91-20-3 | NAPHTHALENE | 0.02(J) | 0.32(J) | MG/KG | HCDD0027 | 13/121 | 0.38-3 | 0.32 | 0.1 | 3.8 | EPA RSL (c) | 0 | No | BSL |
| HC | SVOC | 85-01-8 | PHENANTHRENE | 0.026(J) | 7.2 | MG/KG | HCDD0089 | 111/121 | 0.38-3 | 7.2 | 1.4 | 1800 | EPA RSL (n, Anthracene) | 0 | No | BSL |
| HC | SVOC | 129-00-0 | PYRENE | 0.021(J) | 14 | MG/KG | HCDD0089 | 115/121 | 0.38-3 | 14 | 1.6 | 180 | EPA RSL (n) | 0 | No | BSL |
| HC | VOC | 95-50-1 | 1,2-DICHLOROBENZENE | 0.006(J) | 0.006(J) | MG/KG | HCDD0067 | 1/62 | 0.009-0.14 | 0.006 | | 180 | EPA RSL (n) | 0 | No | BSL |
| HC | VOC | 67-64-1 | ACETONE | 0.007(J) | 0.64(J) | MG/KG | HCDD0007 | 40/59 | 0.009-0.16 | 0.64 | 0.22 | 6100 | EPA RSL (n) | 0 | No | BSL |
| HC | VOC | 75-15-0 | CARBON DISULFIDE | 0.001(J) | 0.033(J) | MG/KG | HCDD0019 | 15/62 | 0.009-0.14 | 0.033 | 0.0165 | 77 | EPA RSL (n) | 0 | No | BSL |
| HC | VOC | 74-87-3 | CHLOROMETHANE | 0.0055(J) | 0.017(J) | MG/KG | HCDD0059 | 7/62 | 0.009-0.14 | 0.017 | | 4 | NJ RDCSRS | 0 | No | BSL |
| HC | VOC | 75-09-2 | DICHLOROMETHANE | 0.002(J) | 0.025(J) | MG/KG | HCDD0020 | 20/62 | 0.009-0.14 | 0.025 | | 35 | EPA RSL (n) | 0 | No | BSL |
| HC | VOC | 100-41-4 | ETHYLBENZENE | 0.001(J) | 0.03 | MG/KG | HCDD0025 | 3/62 | 0.009-0.14 | 0.03 | | 5.8 | EPA RSL (c) | 0 | No | BSL |
| HC | VOC | 79-20-9 | METHYL ACETATE | 0.003(J) | 0.063(J) | MG/KG | HCDD0007 | 20/62 | 0.009-0.14 | 0.063 | 0.005 | 7800 | EPA RSL (n) | 0 | No | BSL |
| HC | VOC | 78-93-3 | METHYL ETHYL KETONE | 0.002(J) | 0.2(J) | MG/KG | HCDD0007 | 57/62 | 0.009-0.14 | 0.2 | 0.0815 | 2700 | EPA RSL (n) | 0 | No | BSL |
| HC | VOC | 108-88-3 | TOLUENE | 0.002(J) | 0.12(J) | MG/KG | HCDD0062 | 13/62 | 0.009-0.14 | 0.12 | 0.002 | 490 | EPA RSL (n) | 0 | No | BSL |
| HC | VOC | 1330-20-7 | XYLENES (TOTAL) | 0.003(J) | 0.11 | MG/KG | HCDD0025 | 3/62 | 0.009-0.14 | 0.11 | | 58 | EPA RSL (n) | 0 | No | BSL |

Notes:

Only analytes detected in at least one sample are presented.

(1) J – Estimated. + – Value is the average of a parent sample and a field duplicate sample. B – Analyte was detected in an associated blank sample.

(2) The maximum detected concentration was used for the screening.

(3) Maximum detected concentrations from project background locations.

(4) All compounds were screened against the lower of the EPA (2017e) Regional Screening Level (RSL) for residential soil (THQ = 0.1; Target Cancer Risk = $10^{-6}$) and New Jersey Residential Direct Contact Soil Remediation Standards (NJ RDCSRS) (NJDEP, 2017).

(n) – Non-cancer. (Surrogate/form) – Surrogate/chemical form used in the absence of chemical-specific screening value.

(c) – Cancer.

(L) – Based on blood lead modeling.

(5) Rationale codes:

Selection reason: ASL – Above screening level.

Deletion reason: BSL – Below screening level.

EN – Essential human nutrient.

LDF – Low detection frequency (<5%).

**Table 2.7**
**Occurrence, Distribution, and Selection of Chemicals of Potential Concern**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Sediment (0-0.5) |
| Exposure Medium: | Sediment from Kirkwood Lake |

| Exposure Point | Chemical Group | CAS Number | Chemical | Minimum Detected Concentration (Qualifier) (1) | Maximum Detected Concentration (Qualifier) (1) | Units | Location of Maximum Concentration | Detection Frequency | Range of Detection Limits | Concentration Used for Screening (2) | Background Value (3) | Screening Criteria (4) | Criteria Basis (4) | Exceeds Crit | COPC Flag (Y/N) | Rationale for Selection or Deletion (5) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KWL | METALS | 7429-90-5 | ALUMINUM | 213 | 44100(J+) | MG/KG | KWDD0004 | 135/135 | 1.5-109 | 44100 | 12000 | 7700 | EPA RSL (n) | 78 | Yes | ASL |
| KWL | METALS | 7440-36-0 | ANTIMONY | 0.22(J) | 16.9(J) | MG/KG | KWDD0056 | 79/135 | 0.15-32.7 | 16.9 | 1.7 | 3.1 | EPA RSL (n, Antimony (metallic)) | 15 | Yes | ASL |
| KWL | METALS | 7440-38-2 | ARSENIC | 0.73(J) | 277(J) | MG/KG | HCDD0050 | 124/124 | 0.12-50.9 | 277 | 15.2 | 0.68 | EPA RSL (c) | 124 | Yes | ASL |
| KWL | METALS | 7440-39-3 | BARIUM | 5.1(J) | 1450(J) | MG/KG | KWDD0040 | 131/131 | 0.22-109 | 1450 | 195 | 1500 | EPA RSL (n) | 0 | No | BSL |
| KWL | METALS | 7440-41-7 | BERYLLIUM | 0.039(J) | 4.4(J) | MG/KG | HCDD0046 | 126/135 | 0.013-2.7 | 4.4 | 0.96 | 16 | EPA RSL (n) | 0 | No | BSL |
| KWL | METALS | 7440-43-9 | CADMIUM | 0.022(J) | 15.6(J) | MG/KG | KWDD0049 | 123/126 | 0.017-2.7 | 15.6 | 3.1 | 7.1 | EPA RSL (n, Cadmium (Diet)) | 50 | Yes | ASL |
| KWL | METALS | 7440-70-2 | CALCIUM | 22.5(J) | 12100(J) | MG/KG | HCDD0046 | 135/135 | 4.3-2720 | 12100 | 3690 | | EN | | No | EN |
| KWL | METALS | 7440-47-3 | CHROMIUM | 1.2(J) | 696(J) | MG/KG | HCDD0050 | 135/135 | 0.017-109 | 696 | 33.6 | 0.3 | EPA RSL (c, Chromium(VI)) | 135 | Yes | ASL |
| KWL | METALS | 7440-48-4 | COBALT | 0.087(J) | 17.3(J) | MG/KG | KWDD0080 | 131/135 | 0.034-27.2 | 17.3 | 15.3 | 2.3 | EPA RSL (n) | 94 | Yes | ASL |
| KWL | METALS | 7440-50-8 | COPPER | 0.18(J) | 462(J+) | MG/KG | KWDD0055 | 125/125 | 0.084-13.6 | 462 | 48.3 | 310 | EPA RSL (n) | 23 | Yes | ASL |
| KWL | METALS | 57-12-5 | CYANIDE | 0.25(J) | 72.1(J) | MG/KG | HCDD0049 | 47/133 | 0.039-4.3 | 72.1 | 0.2 | 2.3 | EPA RSL (n, Cyanide (CN-)) | 27 | Yes | ASL |
| KWL | METALS | 7439-89-6 | IRON | 377 | 52700(J) | MG/KG | KWDD0049 | 135/135 | 0.92-54.5 | 52700 | 18200 | 5500 | EPA RSL (n) | 110 | Yes | ASL |
| KWL | METALS | 7439-92-1 | LEAD | 1.8(J) | 6720(J) | MG/KG | HCDD0048 | 135/135 | 0.13-120 | 6720 | 240 | 400 | EPA RSL (L, Lead and Compounds) | 81 | Yes | ASL |
| KWL | METALS | 7439-95-4 | MAGNESIUM | 3(J) | 2600(J) | MG/KG | KWDD0056 | 135/135 | 2.3-2720 | 2600 | 590 | | EN | | No | EN |
| KWL | METALS | 7439-96-5 | MANGANESE | 2.1(J) | 383(JD) | MG/KG | KWDD0040 | 135/135 | 0.01-76.6 | 383 | 111 | 180 | EPA RSL (n, Manganese (Non-diet)) | 34 | Yes | ASL |
| KWL | METALS | 7439-97-6 | MERCURY | 0.02(J) | 1.3(J) | MG/KG | KWDD0040; KWDD0063 | 93/135 | 0.042-0.71 | 1.3 | 0.525 | 2.3 | EPA RSL (n, Mercuric Chloride (and other Merc | 0 | No | BSL |
| KWL | METALS | 7440-02-0 | NICKEL | 0.37(J) | 471(J) | MG/KG | KWDD0056 | 133/135 | 0.067-21.8 | 471 | 21.4 | 150 | EPA RSL (n, Nickel Soluble Salts) | 1 | Yes | ASL |
| KWL | METALS | 7440-09-7 | POTASSIUM | 8.6(J) | 5250(J) | MG/KG | KWDD0001 | 131/135 | 7-2720 | 5250 | 480 | | EN | | No | EN |
| KWL | METALS | 7782-49-2 | SELENIUM | 0.16(J) | 5.5(J) | MG/KG | KWDD0018 | 68/135 | 0.12-19.1 | 5.5 | 2.1 | 39 | EPA RSL (n) | 0 | No | BSL |
| KWL | METALS | 7440-22-4 | SILVER | 0.08(J) | 4.4(J) | MG/KG | HCDD0047 | 59/128 | 0.05-5.4 | 4.4 | 0.3 | 39 | EPA RSL (n) | 0 | No | BSL |
| KWL | METALS | 7440-23-5 | SODIUM | 4.7(J) | 1130(J) | MG/KG | KWDD0089 | 114/135 | 1.6-2720 | 1130 | 414 | | EN | | No | EN |
| KWL | METALS | 7440-28-0 | THALLIUM | 0.38(J) | 9.8(J) | MG/KG | HCDD0048 | 9/135 | 0.15-13.6 | 9.8 | 4.9 | 0.078 | EPA RSL (n, Thallium (Soluble Salts)) | 9 | Yes | ASL |
| KWL | METALS | 7440-62-2 | VANADIUM | 1.5(J) | 106 | MG/KG | KWDD0001 | 135/135 | 0.05-27.2 | 106 | 37.1 | 39 | EPA RSL (n, Vanadium and Compounds) | 26 | Yes | ASL |
| KWL | METALS | 7440-66-6 | ZINC | 1.7(J) | 1980(J) | MG/KG | KWDD0049 | 135/135 | 0.013-654 | 1980 | 361 | 2300 | EPA RSL (n) | 0 | No | BSL |
| KWL | PEST/PCB | 72-54-8 | 4,4'-DDD | 0.0074 | 0.031(J) | MG/KG | HCDD0050 | 5/6 | 0.004-0.017 | 0.031 | 0.0031 | 0.19 | EPA RSL (n) | 0 | No | BSL |
| KWL | PEST/PCB | 72-55-9 | 4,4'-DDE | 0.011 | 0.071(J) | MG/KG | HCDD0050 | 5/6 | 0.004-0.017 | 0.071 | 0.0027 | 2 | EPA RSL (c) | 0 | No | BSL |
| KWL | PEST/PCB | 50-29-3 | 4,4'-DDT | 0.0089(J) | 0.0089(J) | MG/KG | HCDD0050 | 1/6 | 0.004-0.017 | 0.0089 | 0.001 | 1.9 | EPA RSL (c) | 0 | No | BSL |
| KWL | PEST/PCB | 5103-71-9 | ALPHA-CHLORDANE | 0.0012(J) | 0.0055(J) | MG/KG | HCDD0048 | 3/6 | 0.0021-0.0089 | 0.0055 | 0.0014 | 0.2 | NJ RDCSRS (c) | 0 | No | BSL |
| KWL | PEST/PCB | 53469-21-9 | AROCLOR-1242 | 0.07475(J) | 0.29(J) | MG/KG | KWDD0036 | 2/111 | 0.019-1.8 | 0.29 | | 0.2 | NJ RDCSRS (PCB) | 1 | No | LDF |
| KWL | PEST/PCB | 11097-69-1 | AROCLOR-1254 | 0.027 | 0.505(J+) | MG/KG | KWDD0018 | 46/111 | 0.019-1.8 | 0.505 | 0.042 | 0.12 | EPA RSL (n) | 39 | Yes | ASL |
| KWL | PEST/PCB | 11096-82-5 | AROCLOR-1260 | 0.051 | 0.15(J+) | MG/KG | KWDD0018 | 7/111 | 0.019-1.8 | 0.15 | 0.03435 | 0.12 | EPA RSL (n, Aroclor 1254) | 2 | Yes | ASL |
| KWL | PEST/PCB | 319-85-7 | BETA-BHC | 0.0055(J) | 0.011(J) | MG/KG | HCDD0050 | 2/6 | 0.0021-0.0089 | 0.011 | | 0.3 | EPA RSL (c) | 0 | No | BSL |
| KWL | PEST/PCB | 5103-74-2 | GAMMA-CHLORDANE | 0.0018(J) | 0.0043(J) | MG/KG | HCDD0049 | 2/6 | 0.0021-0.0089 | 0.0043 | 0.00052 | 0.2 | NJ RDCSRS (c) | 0 | No | BSL |
| KWL | PEST/PCB | 1024-57-3 | HEPTACHLOR EPOXIDE | 0.0022(J) | 0.0022(J) | MG/KG | HCDD0047 | 1/6 | 0.0021-0.0089 | 0.0022 | | 0.07 | EPA RSL (c) | 0 | No | BSL |
| KWL | SVOC | 91-57-6 | 2-METHYLNAPHTHALENE | 0.05(J) | 0.05(J) | MG/KG | HCDD0047 | 1/6 | 0.4-1.7 | 0.05 | 0.0016 | 24 | EPA RSL (n) | 0 | No | BSL |
| KWL | SVOC | 83-32-9 | ACENAPHTHENE | 0.005(J) | 3.5(J) | MG/KG | KWDD0085 | 19/111 | 0.38-4.3 | 3.5 | 0.01 | 360 | EPA RSL (n) | 0 | No | BSL |
| KWL | SVOC | 208-96-8 | ACENAPHTHYLENE | 0.015(J) | 0.685(J+) | MG/KG | KWDD0004 | 39/111 | 0.38-4.3 | 0.685 | | 360 | EPA RSL (n, Acenaphthene) | 0 | No | BSL |
| KWL | SVOC | 120-12-7 | ANTHRACENE | 0.016(J) | 4.4 | MG/KG | KWDD0085 | 64/111 | 0.38-4.3 | 4.4 | 0.025 | 1800 | EPA RSL (n) | 0 | No | BSL |
| KWL | SVOC | 100-52-7 | BENZALDEHYDE | 0.19(J) | 1.5(J) | MG/KG | HCDD0050 | 4/6 | 0.4-1.7 | 1.5 | 0.19 | 170 | EPA RSL (c) | 0 | No | BSL |
| KWL | SVOC | 56-55-3 | BENZO(A)ANTHRACENE | 0.012(J) | 15 | MG/KG | KWDD0085 | 90/111 | 0.38-4.3 | 15 | 0.19 | 1.1 | EPA RSL (c) | 6 | Yes | ASL |
| KWL | SVOC | 50-32-8 | BENZO(A)PYRENE | 0.013(J) | 11 | MG/KG | KWDD0085 | 89/111 | 0.38-4.3 | 11 | 0.18 | 0.11 | EPA RSL (c) | 75 | Yes | ASL |
| KWL | SVOC | 205-99-2 | BENZO(B)FLUORANTHENE | 0.006(J) | 15 | MG/KG | KWDD0085 | 91/111 | 0.38-4.3 | 15 | 0.27 | 1.1 | EPA RSL (c) | 21 | Yes | ASL |
| KWL | SVOC | 191-24-2 | BENZO(G,H,I)PERYLENE | 0.015(J) | 1.2(J) | MG/KG | KWDD0085 | 76/111 | 0.38-4.3 | 1.2 | 0.14 | 180 | EPA RSL (n, Pyrene) | 0 | No | BSL |
| KWL | SVOC | 207-08-9 | BENZO(K)FLUORANTHENE | 0.006(J) | 11 | MG/KG | KWDD0085 | 91/111 | 0.38-4.3 | 11 | 0.22 | 11 | EPA RSL (c) | 0 | No | BSL |
| KWL | SVOC | 117-81-7 | BIS(2-ETHYLHEXYL) PHTHALATE | 0.25(J) | 0.81(J) | MG/KG | HCDD0048 | 6/6 | 0.4-1.7 | 0.81 | 0.29 | 35 | NJ RDCSRS (c) | 0 | No | BSL |
| KWL | SVOC | 86-74-8 | CARBAZOLE | 0.092(J) | 0.092(J) | MG/KG | HCDD0047 | 1/6 | 0.4-1.7 | 0.092 | | 24 | NJ RDCSRS (c) | 0 | No | BSL |
| KWL | SVOC | 218-01-9 | CHRYSENE | 0.006(J) | 14 | MG/KG | KWDD0085 | 93/111 | 0.38-4.3 | 14 | 0.24 | 110 | EPA RSL (c) | 0 | No | BSL |
| KWL | SVOC | 53-70-3 | DIBENZO(A,H)ANTHRACENE | 0.011(J) | 1.4(J) | MG/KG | KWDD0085 | 51/111 | 0.38-4.3 | 1.4 | 0.043 | 0.11 | EPA RSL (c) | 23 | Yes | ASL |
| KWL | SVOC | 132-64-9 | DIBENZOFURAN | 0.07(J) | 0.07(J) | MG/KG | HCDD0047 | 1/6 | 0.4-1.7 | 0.07 | | 7.3 | EPA RSL (n) | 0 | No | BSL |
| KWL | SVOC | 84-74-2 | DI-N-BUTYLPHTHALATE | 0.059(J) | 0.099(J) | MG/KG | HCDD0048 | 2/6 | 0.4-1.7 | 0.099 | 0.0155 | 630 | EPA RSL (n) | 0 | No | BSL |
| KWL | SVOC | 206-44-0 | FLUORANTHENE | 0.013(J) | 27 | MG/KG | KWDD0085 | 95/111 | 0.38-4.3 | 27 | 0.42 | 240 | EPA RSL (n) | 0 | No | BSL |
| KWL | SVOC | 86-73-7 | FLUORENE | 0.008(J) | 2.7(J) | MG/KG | KWDD0085 | 27/111 | 0.38-4.3 | 2.7 | 0.00255 | 240 | EPA RSL (n) | 0 | No | BSL |
| KWL | SVOC | 193-39-5 | INDENO(1,2,3-CD)PYRENE | 0.006(J) | 3.2(J) | MG/KG | KWDD0085 | 84/111 | 0.38-4.3 | 3.2 | 0.15 | 1.1 | EPA RSL (c) | 1 | Yes | ASL |
| KWL | SVOC | 91-20-3 | NAPHTHALENE | 0.012(J) | 0.16(J) | MG/KG | KWDD0017 | 11/111 | 0.38-4.3 | 0.16 | 0.0016 | 3.8 | EPA RSL (c) | 0 | No | BSL |
| KWL | SVOC | 85-01-8 | PHENANTHRENE | 0.007(J) | 18 | MG/KG | KWDD0085 | 90/111 | 0.38-4.3 | 18 | 0.2 | 1800 | EPA RSL (n, Anthracene) | 0 | No | BSL |
| KWL | SVOC | 129-00-0 | PYRENE | 0.015(J) | 20 | MG/KG | KWDD0085 | 95/111 | 0.38-4.3 | 20 | 0.37 | 180 | EPA RSL (n) | 0 | No | BSL |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Sediment (0-0.5) |
| Exposure Medium: | Sediment from Kirkwood Lake |

| Exposure Point | Chemical Group | CAS Number | Chemical | Minimum Detected Concentration (Qualifier) (1) | Maximum Detected Concentration (Qualifier) (1) | Units | Location of Maximum Concentration | Detection Frequency | Range of Detection Limits | Concentration Used for Screening (2) | Background Value (3) | Screening Criteria (4) | Criteria Basis (4) | Exceeds Crit | COPC Flag (Y/N) | Rationale for Selection or Deletion (5) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KWL | VOC | 67-64-1 | ACETONE | 0.004(J) | 0.27(J) | MG/KG | HCDD0050 | 6/6 | 0.009-0.086 | 0.27 | 0.48 | 6100 | EPA RSL (n) | 0 | No | BSL |
| KWL | VOC | 75-15-0 | CARBON DISULFIDE | 0.011(J) | 0.011(J) | MG/KG | HCDD0050 | 1/6 | 0.009-0.086 | 0.011 | 0.041 | 77 | EPA RSL (n) | 0 | No | BSL |
| KWL | VOC | 78-93-3 | METHYL ETHYL KETONE | 0.006(J) | 0.11(J) | MG/KG | HCDD0050 | 5/6 | 0.009-0.086 | 0.11 | 0.36 | 2700 | EPA RSL (n) | 0 | No | BSL |

Notes:

Only analytes detected in at least one sample are presented.

(1) J – Estimated. + – Value is the average of a parent sample and a field duplicate sample. B – Analyte was detected in an associated blank sample.

(2) The maximum detected concentration was used for the screening.

(3) Maximum detected concentrations from samples collected from Clement Lake (Gradient, 2018).

(4) All compounds were screened against the lower of the EPA (2017e) Regional Screening Level (RSL) for residential soil (THQ = 0.1; Target Cancer Risk = $10^{-6}$) and New Jersey Residential Direct Contact Soil Remediation Standards (NJ RDCSRS) (NJDEP, 2017).

(n) – Non-cancer. (Surrogate/form) – Surrogate/chemical form used in the absence of chemical-specific screening value.

(c) – Cancer.

(L) – Based on blood lead modeling.

(5) Rationale codes:

Selection reason: ASL – Above screening level.

Deletion reason: BSL – Below screening level.

EN – Essential human nutrient.

LDF – Low detection frequency (<5%).

**Table 2.8**
**Occurrence, Distribution, and Selection of Chemicals of Potential Concern**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Surface Water |
| Exposure Medium: | Surface Water from Silver Lake |

| Exposure Point | Chemical Group | CAS Number | Chemical | Minimum Detected Concentration (Qualifier) (1) | Maximum Detected Concentration (Qualifier) (1) | Units | Location of Maximum Concentration | Detection Frequency | Range of Detection Limits | Concentration Used for Screening (2) | Background Value (3) | Screening Criteria (4) | Criteria Basis (4) | Exceeds Crit | COPC Flag (Y/N) | Rationale for Selection or Deletion (5) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SL | METALS | 7429-90-5 | ALUMINUM | 0.0688(J) | 0.539 | MG/L | SLDW0015 | 15/16 | 0.2 | 0.539 | 0.0206 | 2 | EPA Tapwater (n) | 0 | No | BSL |
| SL | METALS | 7440-38-2 | ARSENIC | 0.0065(J) | 0.0128 | MG/L | SLDW0016 | 2/16 | 0.01 | 0.0128 | 0.00041 | 0.000052 | EPA Tapwater (c) | 2 | Yes | ASL |
| SL | METALS | 7440-39-3 | BARIUM | 0.0403(J) | 0.244 | MG/L | SLDW0008 | 13/16 | 0.2 | 0.244 | 0.082 | 0.38 | EPA Tapwater (n) | 0 | No | BSL |
| SL | METALS | 7440-43-9 | CADMIUM | 0.00011(J) | 0.00012(J) | MG/L | SLDW0015 | 2/16 | 0.001 | 0.00012 | | 0.00092 | EPA Tapwater (n, Cadmium (Water)) | 0 | No | BSL |
| SL | METALS | 7440-70-2 | CALCIUM | 17.4 | 35 | MG/L | SLDW0015 | 16/16 | 5 | 35 | 6.81 | | EN | | No | EN |
| SL | METALS | 7440-47-3 | CHROMIUM | 0.001(J) | 0.0026(J) | MG/L | SLDW0016 | 4/16 | 0.01 | 0.0026 | 0.0002 | 0.000035 | EPA Tapwater (c, Chromium(VI)) | 4 | Yes | ASL |
| SL | METALS | 7440-48-4 | COBALT | 0.00058(J) | 0.008(J) | MG/L | SLDW0008 | 4/16 | 0.001 | 0.008 | 0.000135 | 0.0006 | EPA Tapwater (n) | 3 | Yes | ASL |
| SL | METALS | 7440-50-8 | COPPER | 0.00077(J) | 0.0045(J) | MG/L | SLDW0012 | 5/16 | 0.005 | 0.0045 | | 0.08 | EPA Tapwater (n) | 0 | No | BSL |
| SL | METALS | 57-12-5 | CYANIDE | 0.0021(J) | 0.0053(J) | MG/L | SLDW0008 | 5/16 | 0.01 | 0.0053 | | 0.00015 | EPA Tapwater (n, Cyanide (CN-)) | 5 | Yes | ASL |
| SL | METALS | 7439-89-6 | IRON | 0.71 | 29.6 | MG/L | SLDW0008 | 16/16 | 0.1 | 29.6 | 0.8725 | 1.4 | EPA Tapwater (n) | 8 | Yes | ASL |
| SL | METALS | 7439-92-1 | LEAD | 0.00055(J) | 0.0028 | MG/L | SLDW0016 | 8/16 | 0.001 | 0.0028 | | 0.015 | EPA Tapwater (L, Lead and Compounds) | 0 | No | BSL |
| SL | METALS | 7439-95-4 | MAGNESIUM | 3.14(J) | 7.41 | MG/L | SLDW0015 | 16/16 | 5 | 7.41 | 2.3 | | EN | | No | EN |
| SL | METALS | 7439-96-5 | MANGANESE | 0.0388 | 2.51 | MG/L | SLDW0008 | 16/16 | 0.015 | 2.51 | 0.0365 | 0.043 | EPA Tapwater (n, Manganese (Non-diet)) | 14 | Yes | ASL |
| SL | METALS | 7440-02-0 | NICKEL | 0.0021(J) | 0.0021(J) | MG/L | SLDW0016 | 1/16 | 0.04 | 0.0021 | 0.00165 | 0.039 | EPA Tapwater (n, Nickel Soluble Salts) | 0 | No | BSL |
| SL | METALS | 7440-09-7 | POTASSIUM | 1.96(J) | 5.32 | MG/L | SLDW0008 | 16/16 | 5 | 5.32 | 1.88 | | EN | | No | EN |
| SL | METALS | 7440-23-5 | SODIUM | 17.2 | 102 | MG/L | SLDW0012 | 16/16 | 5-50 | 102 | 25.9 | | EN | | No | EN |
| SL | METALS | 7440-66-6 | ZINC | 0.0018(J) | 0.0213(J) | MG/L | SLDW0015 | 7/15 | 0.06 | 0.0213 | | 0.6 | EPA Tapwater (n) | 0 | No | BSL |
| SL | PEST/PCB | 60-57-1 | DIELDRIN | 0.0000052(J) | 0.0000052(J) | MG/L | SLDW0015 | 1/16 | 0.0000094-0.000011 | 0.0000052 | | 0.0000018 | EPA Tapwater (c) | 1 | No | LDF |
| SL | SVOC | 106-44-5 | 4-METHYLPHENOL | 0.0011(J) | 0.0036(J) | MG/L | SLDW0008 | 2/19 | 0.0047-0.0056 | 0.0036 | | 0.19 | EPA Tapwater (n) | 0 | No | BSL |
| SL | SVOC | 83-32-9 | ACENAPHTHENE | 0.000019(J) | 0.000019(J) | MG/L | SLDW0012 | 1/19 | 0.000094-0.0053 | 0.000019 | | 0.053 | EPA Tapwater (n) | 0 | No | BSL |
| SL | SVOC | 120-12-7 | ANTHRACENE | 0.0000043(J) | 0.000056(J) | MG/L | SLDW0012 | 4/19 | 0.000094-0.00011 | 0.000056 | | 0.18 | EPA Tapwater (n) | 0 | No | BSL |
| SL | SVOC | 56-55-3 | BENZO(A)ANTHRACENE | 0.00000775(J) | 0.00024 | MG/L | SLDW0012 | 6/19 | 0.000094-0.0054 | 0.00024 | | 0.00003 | EPA Tapwater (c) | 3 | Yes | ASL |
| SL | SVOC | 50-32-8 | BENZO(A)PYRENE | 0.0000355(J) | 0.00053 | MG/L | SLDW0012 | 11/19 | 0.000095-0.0056 | 0.00053 | | 0.000025 | EPA Tapwater (c) | 11 | Yes | ASL |
| SL | SVOC | 205-99-2 | BENZO(B)FLUORANTHENE | 0.000023(J) | 0.00048 | MG/L | SLDW0012 | 6/19 | 0.000094-0.0056 | 0.00048 | | 0.00025 | EPA Tapwater (c) | 2 | Yes | ASL |
| SL | SVOC | 191-24-2 | BENZO(G,H,I)PERYLENE | 0.000074(J) | 0.00027 | MG/L | SLDW0012 | 3/19 | 0.000094-0.0054 | 0.00027 | | 0.012 | EPA Tapwater (n, Pyrene) | 0 | No | BSL |
| SL | SVOC | 207-08-9 | BENZO(K)FLUORANTHENE | 0.000071(J) | 0.00027(J) | MG/L | SLDW0012 | 3/19 | 0.000094-0.0054 | 0.00027 | | 0.0025 | EPA Tapwater (c) | 0 | No | BSL |
| SL | SVOC | 85-68-7 | BENZYL BUTYL PHTHALATE | 0.00067(J) | 0.00077(J) | MG/L | SLDW0003 | 3/19 | 0.0047-0.0056 | 0.00077 | | 0.016 | EPA Tapwater (c) | 0 | No | BSL |
| SL | SVOC | 117-81-7 | BIS(2-ETHYLHEXYL) PHTHALATE | 0.00064(J) | 0.0058 | MG/L | SLDW0008 | 6/19 | 0.0047-0.0056 | 0.0058 | | 0.0056 | EPA Tapwater (c) | 1 | Yes | ASL |
| SL | SVOC | 105-60-2 | CAPROLACTAM | 0.00145(J) | 0.002(J) | MG/L | SLDW0004 | 2/19 | 0.0047-0.0056 | 0.002 | | 0.99 | EPA Tapwater (n) | 0 | No | BSL |
| SL | SVOC | 218-01-9 | CHRYSENE | 0.000024(J) | 0.00041 | MG/L | SLDW0012 | 5/19 | 0.000094-0.0054 | 0.00041 | | 0.025 | EPA Tapwater (c) | 0 | No | BSL |
| SL | SVOC | 53-70-3 | DIBENZO(A,H)ANTHRACENE | 0.000031(J) | 0.0001 | MG/L | SLDW0012 | 3/19 | 0.000094-0.0054 | 0.0001 | | 0.000025 | EPA Tapwater (c) | 3 | Yes | ASL |
| SL | SVOC | 84-74-2 | DI-N-BUTYLPHTHALATE | 0.00031(J) | 0.0004(J) | MG/L | SLDW0003 | 3/19 | 0.0047-0.0056 | 0.0004 | | 0.09 | EPA Tapwater (n) | 0 | No | BSL |
| SL | SVOC | 206-44-0 | FLUORANTHENE | 0.000038(J) | 0.00094 | MG/L | SLDW0012 | 18/19 | 0.000094-0.0056 | 0.00094 | | 0.08 | EPA Tapwater (n) | 0 | No | BSL |
| SL | SVOC | 193-39-5 | INDENO(1,2,3-CD)PYRENE | 0.000009(J) | 0.00027 | MG/L | SLDW0012 | 6/19 | 0.000094-0.0054 | 0.00027 | | 0.00025 | EPA Tapwater (c) | 1 | Yes | ASL |
| SL | SVOC | 87-86-5 | PENTACHLOROPHENOL | 0.000047(J) | 0.000047(J) | MG/L | SLDW0016 | 1/19 | 0.00019-0.011 | 0.000047 | | 0.000041 | EPA Tapwater (c) | 1 | No | LDF |
| SL | SVOC | 85-01-8 | PHENANTHRENE | 0.000019(J) | 0.00044 | MG/L | SLDW0012 | 18/19 | 0.000094-0.0056 | 0.00044 | | 0.18 | EPA Tapwater (n, Anthracene) | 0 | No | BSL |
| SL | SVOC | 108-95-2 | PHENOL | 0.002(J) | 0.002(J) | MG/L | SLDW0008 | 1/19 | 0.0047-0.0056 | 0.002 | | 0.58 | EPA Tapwater (n) | 0 | No | BSL |
| SL | SVOC | 129-00-0 | PYRENE | 0.000028(J) | 0.00052 | MG/L | SLDW0012 | 6/19 | 0.000094-0.0054 | 0.00052 | | 0.012 | EPA Tapwater (n) | 0 | No | BSL |
| SL | VOC | 67-64-1 | ACETONE | 0.0011(J) | 0.0033(J) | MG/L | SLDW0007 | 8/16 | 0.005 | 0.0033 | 0.0092 | 1.4 | EPA Tapwater (n) | 0 | No | BSL |
| SL | VOC | 79-20-9 | METHYL ACETATE | 0.00034(J) | 0.00034(J) | MG/L | SLDW0008 | 1/16 | 0.0005 | 0.00034 | | 2 | EPA Tapwater (n) | 0 | No | BSL |
| SL | VOC | 78-93-3 | METHYL ETHYL KETONE | 0.00091(J) | 0.00091(J) | MG/L | SLDW0008 | 1/16 | 0.005 | 0.00091 | | 0.56 | EPA Tapwater (n) | 0 | No | BSL |
| SL | VOC | 1634-04-4 | METHYL-TERT-BUTYL-ETHER (MTBE) | 0.00035(J) | 0.0017 | MG/L | SLDW0006 | 12/16 | 0.0005 | 0.0017 | | 0.014 | EPA Tapwater (c) | 0 | No | BSL |
| SL | VOC | 108-88-3 | TOLUENE | 0.00036(J) | 0.00082 | MG/L | SLDW0008 | 2/16 | 0.0005 | 0.00082 | 0.00025 | 0.11 | EPA Tapwater (n) | 0 | No | BSL |
| SL | VOC | | XYLENES, M & P | 0.00021(J) | 0.00024(J) | MG/L | SLDW0006 | 3/16 | 0.0005 | 0.00024 | | 0.019 | EPA Tapwater (n, m-Xylene) | 0 | No | BSL |

Notes:

Only analytes detected in at least one sample are presented.

(1) J – Estimated. + – Value is the average of a parent sample and a field duplicate sample. B – Analyte was detected in an associated blank sample.

(2) The maximum detected concentration was used for the screening.

(3) Maximum detected concentrations from samples collected from Clement Lake (Gradient, 2018).

(4) All compounds were screened against the EPA (2017e) Regional Screening Level (RSL) for tap water (THQ = 0.1, Target Cancer Risk = $10^{-6}$).

(n) – Non-cancer. (Surrogate/form) – Surrogate/chemical form used in the absence of chemical-specific screening value.

(c) – Cancer.

(L) – Based on blood lead modeling.

(5) Rationale codes:

Selection reason: ASL – Above screening level.

Deletion reason: BSL – Below screening level.

EN – Essential human nutrient.

LDF – Low detection frequency (<5%).

**Table 2.9**
**Occurrence, Distribution, and Selection of Chemicals of Potential Concern**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Surface Water |
| Exposure Medium: | Surface Water from Bridgewood Lake |

| Exposure Point | Chemical Group | CAS Number | Chemical | Minimum Detected Concentration (Qualifier) (1) | Maximum Detected Concentration (Qualifier) (1) | Units | Location of Maximum Concentration | Detection Frequency | Range of Detection Limits | Concentration Used for Screening (2) | Background Value (3) | Screening Criteria (4) | Criteria Basis (4) | Exceeds Crit | COPC Flag (Y/N) | Rationale for Selection or Deletion (5) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BWL | METALS | 7429-90-5 | ALUMINUM | 0.04945(J) | 5.25 | MG/L | BWDW0009 | 27/27 | 0.018-0.2 | 5.25 | 0.0206 | 2 | EPA Tapwater (n) | 1 | Yes | ASL |
| BWL | METALS | 7440-36-0 | ANTIMONY | 0.00016(J) | 0.0042(J) | MG/L | BWDW0003 | 8/27 | 0.002-0.06 | 0.0042 | | 0.00078 | EPA Tapwater (n, Antimony (metallic)) | 2 | Yes | ASL |
| BWL | METALS | 7440-38-2 | ARSENIC | 0.004(J) | 0.108(J) | MG/L | BWDW0009 | 26/27 | 0.001-0.01 | 0.108 | 0.00041 | 0.000052 | EPA Tapwater (c) | 26 | Yes | ASL |
| BWL | METALS | 7440-39-3 | BARIUM | 0.0937(J) | 0.345 | MG/L | BWDW0009 | 27/27 | 0.0006-0.2 | 0.345 | 0.082 | 0.38 | EPA Tapwater (n) | 0 | No | BSL |
| BWL | METALS | 7440-41-7 | BERYLLIUM | 0.00011(J) | 0.00052(J) | MG/L | BWDW0009 | 5/27 | 0.0001-0.001 | 0.00052 | | 0.0025 | EPA Tapwater (n) | 0 | No | BSL |
| BWL | METALS | 7440-43-9 | CADMIUM | 0.0002(J) | 0.0031(J) | MG/L | BWDW0009 | 7/27 | 0.0002-0.001 | 0.0031 | | 0.00092 | EPA Tapwater (n, Cadmium (Water)) | 3 | Yes | ASL |
| BWL | METALS | 7440-70-2 | CALCIUM | 7.61 | 11.75(+) | MG/L | BWDW0010 | 21/21 | 0.016-5 | 11.75 | 6.81 | | EN | | No | EN |
| BWL | METALS | 7440-47-3 | CHROMIUM | 0.00066(J) | 0.0253 | MG/L | BWDW0009 | 16/27 | 0.0008-0.01 | 0.0253 | 0.0002 | 0.000035 | EPA Tapwater (c, Chromium(VI)) | 16 | Yes | ASL |
| BWL | METALS | 7440-48-4 | COBALT | 0.00024(J) | 0.0031(J) | MG/L | BWDW0009 | 11/27 | 0.0005-0.0014 | 0.0031 | 0.000135 | 0.0006 | EPA Tapwater (n) | 6 | Yes | ASL |
| BWL | METALS | 7440-50-8 | COPPER | 0.00098(J) | 0.0282 | MG/L | BWDW0009 | 10/27 | 0.002-0.005 | 0.0282 | | 0.08 | EPA Tapwater (n) | 0 | No | BSL |
| BWL | METALS | 57-12-5 | CYANIDE | 0.00084(J) | 0.0068(J) | MG/L | BWDW0006 | 5/27 | 0.00086-0.01 | 0.0068 | | 0.00015 | EPA Tapwater (n, Cyanide (CN-)) | 5 | Yes | ASL |
| BWL | METALS | 7439-89-6 | IRON | 0.796 | 22.7 | MG/L | BWDW0009 | 27/27 | 0.016-0.1 | 22.7 | 0.8725 | 1.4 | EPA Tapwater (n) | 15 | Yes | ASL |
| BWL | METALS | 7439-92-1 | LEAD | 0.0026(J) | 0.297 | MG/L | BWDW0009 | 25/27 | 0.001-0.0024 | 0.297 | | 0.015 | EPA Tapwater (L, Lead and Compounds) | 7 | Yes | ASL |
| BWL | METALS | 7439-95-4 | MAGNESIUM | 1.57(J) | 2.295(J+) | MG/L | BWDW0010 | 21/21 | 0.017-5 | 2.295 | 2.3 | | EN | | No | EN |
| BWL | METALS | 7439-96-5 | MANGANESE | 0.0122(J) | 0.179 | MG/L | BSBEDW14 | 27/27 | 0.0003-0.015 | 0.179 | 0.0365 | 0.043 | EPA Tapwater (n, Manganese (Non-diet)) | 14 | Yes | ASL |
| BWL | METALS | 7439-97-6 | MERCURY | 0.00012(J) | 0.00017(J) | MG/L | BWDW0005 | 2/27 | 0.0001-0.0002 | 0.00017 | | 0.00057 | EPA Tapwater (n, Mercuric Chloride (and other Mercury salts)) | 0 | No | BSL |
| BWL | METALS | 7440-02-0 | NICKEL | 0.001(J) | 0.0102(J) | MG/L | BWDW0009 | 25/27 | 0.0009-0.04 | 0.0102 | 0.00165 | 0.039 | EPA Tapwater (n, Nickel Soluble Salts) | 0 | No | BSL |
| BWL | METALS | 7440-09-7 | POTASSIUM | 1.35(J) | 1.975(J+) | MG/L | BWDW0010 | 21/21 | 0.036-5 | 1.975 | 1.88 | | EN | | No | EN |
| BWL | METALS | 7782-49-2 | SELENIUM | 0.0044(J) | 0.0045(J) | MG/L | BWDW0010 | 2/27 | 0.0042-0.005 | 0.0045 | | 0.01 | EPA Tapwater (n) | 0 | No | BSL |
| BWL | METALS | 7440-22-4 | SILVER | 0.001075(J) | 0.0017(J) | MG/L | DW0002; BWDW0 | 4/27 | 0.0007-0.0012 | 0.0017 | | 0.0094 | EPA Tapwater (n) | 0 | No | BSL |
| BWL | METALS | 7440-23-5 | SODIUM | 11.7 | 24.5(+) | MG/L | BWDW0010 | 21/21 | 0.16-5 | 24.5 | 25.9 | | EN | | No | EN |
| BWL | METALS | 7440-28-0 | THALLIUM | 0.000034(J) | 0.0056(J) | MG/L | DW0004; BWDW0 | 6/27 | 0.001-0.0046 | 0.0056 | | 0.00002 | EPA Tapwater (n, Thallium (Soluble Salts)) | 6 | Yes | ASL |
| BWL | METALS | 7440-62-2 | VANADIUM | 0.00027(J) | 0.0138(J) | MG/L | BWDW0009 | 13/27 | 0.0005-0.005 | 0.0138 | | 0.0086 | EPA Tapwater (n, Vanadium and Compounds) | 1 | Yes | ASL |
| BWL | METALS | 7440-66-6 | ZINC | 0.0094(J) | 0.362(J) | MG/L | BWDW0009 | 27/27 | 0.0014-0.06 | 0.362 | | 0.6 | EPA Tapwater (n) | 0 | No | BSL |
| BWL | PEST/PCB | 72-54-8 | 4,4'-DDD | 0.00000021(J) | 0.0000014(J) | MG/L | BSBEDW15 | 2/27 | 0.0000094-0.00012 | 0.0000014 | | 0.0000063 | EPA Tapwater (n) | 0 | No | BSL |
| BWL | PEST/PCB | 72-55-9 | 4,4'-DDE | 0.00000016(J) | 0.00000065(J) | MG/L | BSBEDW15 | 2/27 | 0.0000094-0.00012 | 0.00000065 | | 0.000046 | EPA Tapwater (c) | 0 | No | BSL |
| BWL | PEST/PCB | 309-00-2 | ALDRIN | 0.000001505(J) | 0.000001505(J+) | MG/L | BWDW0010 | 1/21 | 0.0000055-0.000059 | 0.000001505 | | 0.00000092 | EPA Tapwater (c) | 1 | No | LDF |
| BWL | PEST/PCB | 319-85-7 | BETA-BHC | 0.00000096(J) | 0.0000017(J) | MG/L | BSBEDW15 | 2/27 | 0.0000047-0.000059 | 0.0000017 | | 0.000025 | EPA Tapwater (c) | 0 | No | BSL |
| BWL | PEST/PCB | 319-86-8 | DELTA-BHC | 0.00000026(J) | 0.00000026(J) | MG/L | BSBEDW13 | 1/27 | 0.0000047-0.000059 | 0.00000026 | | 0.000025 | EPA Tapwater (c, Hexachlorocyclohexane, Beta-) | 0 | No | BSL |
| BWL | PEST/PCB | 60-57-1 | DIELDRIN | 0.000000315(J) | 0.000000315(J+) | MG/L | BWDW0010 | 1/21 | 0.000011-0.00012 | 0.000000315 | | 0.0000018 | EPA Tapwater (c) | 0 | No | BSL |
| BWL | PEST/PCB | 72-20-8 | ENDRIN | 0.00000021(J) | 0.00000021(J) | MG/L | BSBEDW15 | 1/27 | 0.0000094-0.00012 | 0.00000021 | | 0.00023 | EPA Tapwater (n) | 0 | No | BSL |
| BWL | PEST/PCB | 7421-93-4 | ENDRIN ALDEHYDE | 0.00000022(J) | 0.0000006(J) | MG/L | BSBEDW15 | 2/27 | 0.0000094-0.00012 | 0.0000006 | | 0.00023 | EPA Tapwater (n, Endrin) | 0 | No | BSL |
| BWL | PEST/PCB | 58-89-9 | GAMMA-BHC (LINDANE) | 0.0000013(J) | 0.0000039(J) | MG/L | BSBEDW15 | 6/27 | 0.0000047-0.000059 | 0.0000039 | | 0.000042 | EPA Tapwater (c) | 0 | No | BSL |
| BWL | PEST/PCB | 76-44-8 | HEPTACHLOR | 0.00000151(J) | 0.00000151(J+) | MG/L | BWDW0010 | 1/21 | 0.0000055-0.000059 | 0.00000151 | | 0.0000014 | EPA Tapwater (c) | 1 | No | LDF |
| BWL | PEST/PCB | 1024-57-3 | HEPTACHLOR EPOXIDE | 0.00000015(J) | 0.00000015(J) | MG/L | BSBEDW13 | 1/27 | 0.0000047-0.000059 | 0.00000015 | | 0.0000014 | EPA Tapwater (c) | 0 | No | BSL |
| BWL | SVOC | 105-67-9 | 2,4-DIMETHYLPHENOL | 0.001745(J) | 0.001745(J+) | MG/L | BWDW0010 | 1/21 | 0.0054-0.01 | 0.001745 | | 0.036 | EPA Tapwater (n) | 0 | No | BSL |
| BWL | SVOC | 91-57-6 | 2-METHYLNAPHTHALENE | 0.0000035(J) | 0.00002915(J+) | MG/L | BWDW0010 | 2/27 | 0.000095-0.01 | 0.00002915 | | 0.0036 | EPA Tapwater (n) | 0 | No | BSL |
| BWL | SVOC | 83-32-9 | ACENAPHTHENE | 0.0000028(J) | 0.000013(J) | MG/L | BSBEDW13 | 5/27 | 0.000095-0.01 | 0.000013 | | 0.053 | EPA Tapwater (n) | 0 | No | BSL |
| BWL | SVOC | 120-12-7 | ANTHRACENE | 0.0000016(J) | 0.0000048(J) | MG/L | BSBEDW13 | 2/27 | 0.000095-0.01 | 0.0000048 | | 0.18 | EPA Tapwater (n) | 0 | No | BSL |
| BWL | SVOC | 56-55-3 | BENZO(A)ANTHRACENE | 0.0000018(J) | 0.000029(J) | MG/L | BSBEDW13 | 6/27 | 0.000095-0.01 | 0.000029 | | 0.00003 | EPA Tapwater (c) | 0 | No | BSL |
| BWL | SVOC | 50-32-8 | BENZO(A)PYRENE | 0.000034(J) | 0.000034(J) | MG/L | BSBEDW13 | 1/27 | 0.000095-0.01 | 0.000034 | | 0.000025 | EPA Tapwater (c) | 1 | Yes | ASL |
| BWL | SVOC | 205-99-2 | BENZO(B)FLUORANTHENE | 0.000048(J) | 0.000048(J) | MG/L | BSBEDW13 | 1/27 | 0.000095-0.01 | 0.000048 | | 0.00025 | EPA Tapwater (c) | 0 | No | BSL |
| BWL | SVOC | 191-24-2 | BENZO(G,H,I)PERYLENE | 0.0000032(J) | 0.000017(J) | MG/L | BSBEDW13 | 4/27 | 0.000095-0.01 | 0.000017 | | 0.012 | EPA Tapwater (n, Pyrene) | 0 | No | BSL |
| BWL | SVOC | 207-08-9 | BENZO(K)FLUORANTHENE | 0.000039(J) | 0.000039(J) | MG/L | BSBEDW13 | 1/27 | 0.000095-0.01 | 0.000039 | | 0.0025 | EPA Tapwater (c) | 0 | No | BSL |
| BWL | SVOC | 105-60-2 | CAPROLACTAM | 0.0007(J) | 0.0007(J) | MG/L | BWDW0006 | 1/27 | 0.0047-0.01 | 0.0007 | | 0.99 | EPA Tapwater (n) | 0 | No | BSL |
| BWL | SVOC | 218-01-9 | CHRYSENE | 0.0000033(J) | 0.000048(J) | MG/L | BSBEDW13 | 7/27 | 0.000095-0.01 | 0.000048 | | 0.025 | EPA Tapwater (c) | 0 | No | BSL |
| BWL | SVOC | 53-70-3 | DIBENZO(A,H)ANTHRACENE | 0.0000055(J) | 0.0000055(J) | MG/L | BSBEDW13 | 1/27 | 0.000095-0.01 | 0.0000055 | | 0.000025 | EPA Tapwater (c) | 0 | No | BSL |
| BWL | SVOC | 206-44-0 | FLUORANTHENE | 0.0000065(J) | 0.0002(J) | MG/L | BWDW0009 | 5/27 | 0.000095-0.01 | 0.0002 | | 0.08 | EPA Tapwater (n) | 0 | No | BSL |
| BWL | SVOC | 86-73-7 | FLUORENE | 0.0000045(J) | 0.000015(J) | MG/L | BSBEDW14 | 5/27 | 0.000095-0.01 | 0.000015 | | 0.029 | EPA Tapwater (n) | 0 | No | BSL |
| BWL | SVOC | 193-39-5 | INDENO(1,2,3-CD)PYRENE | 0.0000025(J) | 0.000018(J) | MG/L | BSBEDW13 | 4/27 | 0.000095-0.01 | 0.000018 | | 0.00025 | EPA Tapwater (c) | 0 | No | BSL |
| BWL | SVOC | 87-86-5 | PENTACHLOROPHENOL | 0.0000052(J) | 0.00003(J) | MG/L | BSBEDW15 | 5/27 | 0.00019-0.026 | 0.00003 | | 0.000041 | EPA Tapwater (c) | 0 | No | BSL |
| BWL | SVOC | 85-01-8 | PHENANTHRENE | 0.0000084(J) | 0.0000094(J) | MG/L | BSBEDW14 | 3/27 | 0.000095-0.01 | 0.0000094 | | 0.18 | EPA Tapwater (n, Anthracene) | 0 | No | BSL |
| BWL | SVOC | 129-00-0 | PYRENE | 0.0000058(J) | 0.000056(J) | MG/L | BSBEDW13 | 5/27 | 0.000095-0.01 | 0.000056 | | 0.012 | EPA Tapwater (n) | 0 | No | BSL |
| BWL | VOC | 67-64-1 | ACETONE | 0.0077(J) | 0.01 | MG/L | BWDW0009 | 2/27 | 0.005-0.01 | 0.01 | 0.0092 | 1.4 | EPA Tapwater (n) | 0 | No | BSL |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Surface Water |
| Exposure Medium: | Surface Water from Bridgewood Lake |

| Exposure Point | Chemical Group | CAS Number | Chemical | Minimum Detected Concentration (Qualifier) (1) | Maximum Detected Concentration (Qualifier) (1) | Units | Location of Maximum Concentration | Detection Frequency | Range of Detection Limits | Concentration Used for Screening (2) | Background Value (3) | Screening Criteria (4) | Criteria Basis (4) | Exceeds Crit | COPC Flag (Y/N) | Rationale for Selection or Deletion (5) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BWL | VOC | 98-82-8 | ISOPROPYLBENZENE | 0.000012(J) | 0.000012(J) | MG/L | BSBEDW15 | 1/27 | 0.0005-0.01 | 0.000012 | | 0.045 | EPA Tapwater (n) | 0 | No | BSL |
| BWL | VOC | 78-93-3 | METHYL ETHYL KETONE | 0.0012(J) | 0.0012(J) | MG/L | BSBEDW15 | 1/27 | 0.005-0.01 | 0.0012 | | 0.56 | EPA Tapwater (n) | 0 | No | BSL |
| BWL | VOC | 79-01-6 | TRICHLOROETHYLENE (TCE) | 0.000027(J) | 0.000027(J) | MG/L | BSBEDW13 | 1/27 | 0.0005-0.01 | 0.000027 | | 0.00028 | EPA Tapwater (n) | 0 | No | BSL |

Notes:

Only analytes detected in at least one sample are presented.

(1) J – Estimated. + – Value is the average of a parent sample and a field duplicate sample. B – Analyte was detected in an associated blank sample.

(2) The maximum detected concentration was used for the screening.

(3) Maximum detected concentrations from samples collected from Clement Lake (Gradient, 2018).

(4) All compounds were screened against the EPA (2017e) Regional Screening Level (RSL) for tap water (THQ = 0.1, Target Cancer Risk = $10^{-6}$).

(n) – Non-cancer. (Surrogate/form) – Surrogate/chemical form used in the absence of chemical-specific screening value.

(c) – Cancer.

(L) – Based on blood lead modeling.

(5) Rationale codes:

Selection reason: ASL – Above screening level.

Deletion reason: BSL – Below screening level.

EN – Essential human nutrient.

LDF – Low detection frequency (<5%).

**Table 2.10**
**Occurrence, Distribution, and Selection of Chemicals of Potential Concern**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Surface Water |
| Exposure Medium: | Surface Water from Hilliards Creek |

| Exposure Point | Chemical Group | CAS Number | Chemical | Minimum Detected Concentration (Qualifier) (1) | Maximum Detected Concentration (Qualifier) (1) | Units | Location of Maximum Concentration | Detection Frequency | Range of Detection Limits | Concentration Used for Screening (2) | Background Value (3) | Screening Criteria (4) | Criteria Basis (4) | Exceeds Crit | COPC Flag (Y/N) | Rationale for Selection or Deletion (5) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HC | METALS | 7429-90-5 | ALUMINUM | 0.0196(J) | 13.8(J) | MG/L | HCDW0018 | 23/26 | 0.018-0.056 | 13.8 | 21.5 | 2 | EPA Tapwater (n) | 1 | Yes | ASL |
| HC | METALS | 7440-36-0 | ANTIMONY | 0.0038(J) | 0.004(J) | MG/L | HCDW0010 | 4/26 | 0.0027-0.0047 | 0.004 | 0.0049 | 0.00078 | EPA Tapwater (n, Antimony (metallic)) | 4 | Yes | ASL |
| HC | METALS | 7440-38-2 | ARSENIC | 0.0063(J) | 0.329 | MG/L | HCDW0018 | 21/26 | 0.0045-0.0048 | 0.329 | 0.0619 | 0.000052 | EPA Tapwater (c) | 21 | Yes | ASL |
| HC | METALS | 7440-39-3 | BARIUM | 0.0749(J) | 1.47 | MG/L | HCDW0018 | 26/26 | 0.0006-0.0016 | 1.47 | 0.596 | 0.38 | EPA Tapwater (n) | 2 | Yes | ASL |
| HC | METALS | 7440-41-7 | BERYLLIUM | 0.00011(J) | 0.0016(J) | MG/L | HCDW0018 | 3/26 | 0.0001-0.00064 | 0.0016 | 0.0021 | 0.0025 | EPA Tapwater (n) | 0 | No | BSL |
| HC | METALS | 7440-43-9 | CADMIUM | 0.00042(J) | 0.0199 | MG/L | HCDW0018 | 4/26 | 0.0002-0.00083 | 0.0199 | 0.0022 | 0.00092 | EPA Tapwater (n, Cadmium (Water)) | 2 | Yes | ASL |
| HC | METALS | 7440-70-2 | CALCIUM | 9.06 | 41.7 | MG/L | HCDW0018 | 26/26 | 0.016-0.037 | 41.7 | 30.5 | | EN | | No | EN |
| HC | METALS | 7440-47-3 | CHROMIUM | 0.00085(J) | 0.259 | MG/L | HCDW0018 | 15/26 | 0.0008-0.002 | 0.259 | 0.0161 | 0.000035 | EPA Tapwater (c, Chromium(VI)) | 15 | Yes | ASL |
| HC | METALS | 7440-48-4 | COBALT | 0.00099(J) | 0.0166(J) | MG/L | HCDW0018 | 7/26 | 0.0009-0.0014 | 0.0166 | 0.0032 | 0.0006 | EPA Tapwater (n) | 7 | Yes | ASL |
| HC | METALS | 7440-50-8 | COPPER | 0.0038(J) | 0.186 | MG/L | HCDW0018 | 18/26 | 0.0034-0.005 | 0.186 | 0.0286 | 0.08 | EPA Tapwater (n) | 1 | Yes | ASL |
| HC | METALS | 57-12-5 | CYANIDE | 0.0064(J) | 0.0248 | MG/L | HCDW0009 | 9/26 | 0.00086-0.0011 | 0.0248 | 0.0134 | 0.00015 | EPA Tapwater (n, Cyanide (CN-)) | 9 | Yes | ASL |
| HC | METALS | 7439-89-6 | IRON | 0.571 | 57.1 | MG/L | HCDW0018 | 26/26 | 0.016-0.033 | 57.1 | 95.7 | 1.4 | EPA Tapwater (n) | 15 | Yes | ASL |
| HC | METALS | 7439-92-1 | LEAD | 0.0035 | 3.99 | MG/L | HCDW0018 | 26/26 | 0.0018-0.0024 | 3.99 | 0.259 | 0.015 | EPA Tapwater (L, Lead and Compounds) | 18 | Yes | ASL |
| HC | METALS | 7439-95-4 | MAGNESIUM | 1.78(J) | 8.09 | MG/L | HCDW0010 | 26/26 | 0.017-0.051 | 8.09 | 6.16 | | EN | | No | EN |
| HC | METALS | 7439-96-5 | MANGANESE | 0.0153 | 0.955 | MG/L | HCDW0018 | 26/26 | 0.0003-0.0007 | 0.955 | 0.611 | 0.043 | EPA Tapwater (n, Manganese (Non-diet)) | 16 | Yes | ASL |
| HC | METALS | 7439-97-6 | MERCURY | 0.0001(J) | 0.00099 | MG/L | HCDW0018 | 7/26 | 0.0001 | 0.00099 | 0.0262 | 0.00057 | EPA Tapwater (n, Mercuric Chloride (and other Mercury salts)) | 1 | Yes | ASL |
| HC | METALS | 7440-02-0 | NICKEL | 0.0012(J) | 0.0367(J) | MG/L | HCDW0018 | 24/26 | 0.0009-0.0015 | 0.0367 | 0.0248 | 0.039 | EPA Tapwater (n, Nickel Soluble Salts) | 0 | No | BSL |
| HC | METALS | 7440-09-7 | POTASSIUM | 1.56(J) | 4.65(J) | MG/L | HCDW0018 | 26/26 | 0.036-0.11 | 4.65 | 17.5 | | EN | | No | EN |
| HC | METALS | 7440-22-4 | SILVER | 0.0008(J) | 0.0017(J) | MG/L | HCDW0018 | 3/26 | 0.0007-0.0012 | 0.0017 | | 0.0094 | EPA Tapwater (n) | 0 | No | BSL |
| HC | METALS | 7440-23-5 | SODIUM | 13.4 | 57.9 | MG/L | HCDW0007 | 26/26 | 0.16-0.34 | 57.9 | 33.3 | | EN | | No | EN |
| HC | METALS | 7440-28-0 | THALLIUM | 0.0054(J) | 0.0054(J) | MG/L | HCDW0016 | 1/26 | 0.0044-0.0046 | 0.0054 | | 0.00002 | EPA Tapwater (n, Thallium (Soluble Salts)) | 1 | Yes | ASL |
| HC | METALS | 7440-62-2 | VANADIUM | 0.00039(J) | 0.0323(J) | MG/L | HCDW0018 | 15/26 | 0.0005-0.0012 | 0.0323 | 0.126 | 0.0086 | EPA Tapwater (n, Vanadium and Compounds) | 1 | Yes | ASL |
| HC | METALS | 7440-66-6 | ZINC | 0.0081(J) | 2.2(J) | MG/L | HCDW0018 | 26/26 | 0.0014-0.0033 | 2.2 | 0.161 | 0.6 | EPA Tapwater (n) | 1 | Yes | ASL |
| HC | SVOC | 218-01-9 | CHRYSENE | 0.0003(J) | 0.0003(J) | MG/L | HCDW0007 | 1/26 | 0.01-0.011 | 0.0003 | 0.000013 | 0.025 | EPA Tapwater (c) | 0 | No | BSL |
| HC | SVOC | 206-44-0 | FLUORANTHENE | 0.0005(J) | 0.0005(J) | MG/L | HCDW0007 | 1/26 | 0.01-0.011 | 0.0005 | 0.00002575 | 0.08 | EPA Tapwater (n) | 0 | No | BSL |
| HC | SVOC | 85-01-8 | PHENANTHRENE | 0.0002(J) | 0.0002(J) | MG/L | HCDW0007 | 1/26 | 0.01-0.011 | 0.0002 | 0.000017 | 0.18 | EPA Tapwater (n, Anthracene) | 0 | No | BSL |
| HC | SVOC | 129-00-0 | PYRENE | 0.0005(J) | 0.0005(J) | MG/L | HCDW0007 | 1/26 | 0.01-0.011 | 0.0005 | 0.000021 | 0.012 | EPA Tapwater (n) | 0 | No | BSL |
| HC | VOC | 67-66-3 | CHLOROFORM | 0.002(J) | 0.002(J) | MG/L | HCDW0010 | 1/26 | 0.01 | 0.002 | | 0.00022 | EPA Tapwater (c) | 1 | No | LDF |

Notes:

Only analytes detected in at least one sample are presented.

(1) J – Estimated. + – Value is the average of a parent sample and a field duplicate sample. B – Analyte was detected in an associated blank sample.

(2) The maximum detected concentration was used for the screening.

(3) Maximum detected concentrations from project background locations.

(4) All compounds were screened against the EPA (2017e) Regional Screening Level (RSL) for tap water (THQ = 0.1, Target Cancer Risk = $10^{-6}$).

(n) – Non-cancer. (Surrogate/form) – Surrogate/chemical form used in the absence of chemical-specific screening value.

(c) – Cancer.

(L) – Based on blood lead modeling.

(5) Rationale codes:

Selection reason: ASL – Above screening level.

Deletion reason: BSL – Below screening level.

EN – Essential human nutrient.

LDF – Low detection frequency (<5%).

**Table 2.11**
**Occurrence, Distribution, and Selection of Chemicals of Potential Concern**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Surface Water |
| Exposure Medium: | Surface Water from Kirkwood Lake |

| Exposure Point | Chemical Group | CAS Number | Chemical | Minimum Detected Concentration (Qualifier) (1) | Maximum Detected Concentration (Qualifier) (1) | Units | Location of Maximum Concentration | Detection Frequency | Range of Detection Limits | Concentration Used for Screening (2) | Background Value (3) | Screening Criteria (4) | Criteria Basis (4) | Exceeds Crit | COPC Flag (Y/N) | Rationale for Selection or Deletion (5) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KWL | METALS | 7429-90-5 | ALUMINUM | 0.0752(J) | 2.64 | MG/L | HCDW0019 | 12/12 | 0.018-0.069 | 2.64 | 0.0206 | 2 | EPA Tapwater (n) | 1 | Yes | ASL |
| KWL | METALS | 7440-36-0 | ANTIMONY | 0.0037(J) | 0.0037(J) | MG/L | HCDW0019 | 1/12 | 0.0027-0.0047 | 0.0037 | | 0.00078 | EPA Tapwater (n, Antimony (metallic)) | 1 | Yes | ASL |
| KWL | METALS | 7440-38-2 | ARSENIC | 0.0066(J) | 0.0309 | MG/L | HCDW0019 | 12/12 | 0.0031-0.0048 | 0.0309 | 0.00041 | 0.000052 | EPA Tapwater (c) | 12 | Yes | ASL |
| KWL | METALS | 7440-39-3 | BARIUM | 0.0923(J) | 0.17(J) | MG/L | HCDW0019 | 12/12 | 0.0006-0.0023 | 0.17 | 0.082 | 0.38 | EPA Tapwater (n) | 0 | No | BSL |
| KWL | METALS | 7440-41-7 | BERYLLIUM | 0.00021(J) | 0.00021(J) | MG/L | HCDW0019 | 1/12 | 0.0001-0.00064 | 0.00021 | | 0.0025 | EPA Tapwater (n) | 0 | No | BSL |
| KWL | METALS | 7440-70-2 | CALCIUM | 14.2 | 18 | MG/L | KWDW0011 | 12/12 | 0.016-0.085 | 18 | 6.81 | | EN | | No | EN |
| KWL | METALS | 7440-47-3 | CHROMIUM | 0.0062(J) | 0.0094(J) | MG/L | KWDW0010 | 3/12 | 0.0008-0.0023 | 0.0094 | 0.0002 | 0.000035 | EPA Tapwater (c, Chromium(VI)) | 3 | Yes | ASL |
| KWL | METALS | 7440-48-4 | COBALT | 0.0016(J) | 0.0016(J) | MG/L | HCDW0019 | 1/12 | 0.0009-0.0023 | 0.0016 | 0.000135 | 0.0006 | EPA Tapwater (n) | 1 | Yes | ASL |
| KWL | METALS | 7440-50-8 | COPPER | 0.0015(J) | 0.0101(J) | MG/L | KWDW0010 | 12/12 | 0.0015-0.005 | 0.0101 | | 0.08 | EPA Tapwater (n) | 0 | No | BSL |
| KWL | METALS | 57-12-5 | CYANIDE | 0.0024(J) | 0.0034(J) | MG/L | KWDW0009 | 3/12 | 0.0006-0.0011 | 0.0034 | | 0.00015 | EPA Tapwater (n, Cyanide (CN-)) | 3 | Yes | ASL |
| KWL | METALS | 7439-89-6 | IRON | 1.07 | 5.47 | MG/L | HCDW0019 | 12/12 | 0.016-0.033 | 5.47 | 0.8725 | 1.4 | EPA Tapwater (n) | 3 | Yes | ASL |
| KWL | METALS | 7439-92-1 | LEAD | 0.0146 | 0.0993 | MG/L | KWDW0010 | 12/12 | 0.0018-0.0024 | 0.0993 | | 0.015 | EPA Tapwater (L, Lead and Compounds) | 11 | Yes | ASL |
| KWL | METALS | 7439-95-4 | MAGNESIUM | 2.66(J) | 3.27(J) | MG/L | KWDW0011 | 12/12 | 0.017-0.054 | 3.27 | 2.3 | | EN | | No | EN |
| KWL | METALS | 7439-96-5 | MANGANESE | 0.0445 | 0.151 | MG/L | HCDW0019 | 12/12 | 0.0003-0.002 | 0.151 | 0.0365 | 0.043 | EPA Tapwater (n, Manganese (Non-diet)) | 12 | Yes | ASL |
| KWL | METALS | 7440-02-0 | NICKEL | 0.001(J) | 0.0044(J) | MG/L | HCDW0019 | 10/12 | 0.0009-0.0015 | 0.0044 | 0.00165 | 0.039 | EPA Tapwater (n, Nickel Soluble Salts) | 0 | No | BSL |
| KWL | METALS | 7440-09-7 | POTASSIUM | 1.74(J) | 3.09(J) | MG/L | KWDW0004 | 12/12 | 0.036-0.11 | 3.09 | 1.88 | | EN | | No | EN |
| KWL | METALS | 7440-23-5 | SODIUM | 15.2 | 22.2 | MG/L | KWDW0011 | 12/12 | 0.1259-0.34 | 22.2 | 25.9 | | EN | | No | EN |
| KWL | METALS | 7440-28-0 | THALLIUM | 0.0058(J) | 0.0058(J) | MG/L | HCDW0019 | 1/12 | 0.0044-0.0051 | 0.0058 | | 0.00002 | EPA Tapwater (n, Thallium (Soluble Salts)) | 1 | Yes | ASL |
| KWL | METALS | 7440-62-2 | VANADIUM | 0.0017(J) | 0.0068(J) | MG/L | HCDW0019 | 2/12 | 0.0005-0.0022 | 0.0068 | | 0.0086 | EPA Tapwater (n, Vanadium and Compounds) | 0 | No | BSL |
| KWL | METALS | 7440-66-6 | ZINC | 0.0032(J) | 0.0523 | MG/L | KWDW0010 | 12/12 | 0.0014-0.0033 | 0.0523 | | 0.6 | EPA Tapwater (n) | 0 | No | BSL |

Notes:

Only analytes detected in at least one sample are presented.

(1) J – Estimated. + – Value is the average of a parent sample and a field duplicate sample. B – Analyte was detected in an associated blank sample.

(2) The maximum detected concentration was used for the screening.

(3) Maximum detected concentrations from samples collected from Clement Lake (Gradient, 2018).

(4) All compounds were screened against the EPA (2017e) Regional Screening Level (RSL) for tap water (THQ = 0.1, Target Cancer Risk = $10^{-6}$).

(n) – Non-cancer. (Surrogate/form) – Surrogate/chemical form used in the absence of chemical-specific screening value.

(c) – Cancer.

(L) – Based on blood lead modeling.

(5) Rationale codes:

Selection reason: ASL – Above screening level.

Deletion reason: BSL – Below screening level.

EN – Essential human nutrient.

LDF – Low detection frequency (<5%).

**Table 2.12**
**Occurrence, Distribution, and Selection of Chemicals of Potential Concern**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Fish from Kirkwood Lake |
| Exposure Medium: | Tissue |

| Exposure Point | Chemical Group | CAS Number | Chemical | Minimum Detected Concentration (Qualifier) (1) | Maximum Detected Concentration (Qualifier) (1) | Units | Detection Frequency | Range of Detection Limits | Concentration Used for Screening (2) | Background Value (3) | Screening Criteria (4) | Criteria Basis (4) | Exceeds Crit | COPC Flag (Y/N) | Rationale for Selection or Deletion (5) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KWL | Metals | 7429-90-5 | ALUMINUM | 9.7 | 12.5 | MG/KG | 2/46 | 2.7 | 12.5 | NA | 3210 | nc | 0 | No | BSL |
| KWL | Metals | 7440-36-0 | ANTIMONY | 0.02 | 0.041 | MG/KG | 24/46 | 0.022 | 0.041 | NA | 1.28 | nc | 0 | No | BSL |
| KWL | Metals | 7440-38-2 | ARSENIC | 0.051 | 0.23 | MG/KG | 30/46 | 0.048 | 0.23 | NA | 0.00576 | ca | 30 | Yes | ASL |
| KWL | Metals | 7440-39-3 | BARIUM | 0.16 | 2.4 | MG/KG | 19/46 | 0.16 | 2.4 | NA | 642 | nc | 0 | No | BSL |
| KWL | Metals | 7440-70-2 | CALCIUM | 60.7 | 9460 | MG/KG | 46/46 | 8.8 | 9460 | NA | | | | No | EN |
| KWL | Metals | 7440-47-3 | CHROMIUM | 0.094 | 15 | MG/KG | 43/46 | 0.084 | 15 | NA | 0.0173 | ca, Chromium(VI) | 43 | Yes | ASL |
| KWL | Metals | 7440-48-4 | COBALT | 0.014 | 0.19 | MG/KG | 23/46 | 0.013 | 0.19 | NA | 0.963 | nc | 0 | No | BSL |
| KWL | Metals | 7440-50-8 | COPPER | 0.17 | 2.4 | MG/KG | 43/46 | 0.11 | 2.4 | NA | 128 | nc | 0 | No | BSL |
| KWL | Metals | 7439-89-6 | IRON | 7.2 | 95.3 | MG/KG | 35/46 | 6.5 | 95.3 | NA | 2250 | nc | 0 | No | BSL |
| KWL | Metals | 7439-92-1 | LEAD | 0.033 | 1 | MG/KG | 24/46 | 0.034 | 1 | NA | 0.05 | IEUBK model | 18 | Yes | ASL |
| KWL | Metals | 7439-95-4 | MAGNESIUM | 93.7 | 456 | MG/KG | 46/46 | 2.7 | 456 | NA | | | | No | EN |
| KWL | Metals | 7439-96-5 | MANGANESE | 0.105 | 3.5 | MG/KG | 44/46 | 0.077 | 3.5 | NA | 449 | nc | 0 | No | BSL |
| KWL | Metals | 7439-97-6 | MERCURY | 0.016 | 0.155 | MG/KG | 26/46 | 0.012 | 0.155 | NA | 0.321 | nc, Methyl Mercury | 0 | No | BSL |
| KWL | Metals | 7440-02-0 | NICKEL | 0.053 | 8.9 | MG/KG | 37/46 | 0.047 | 8.9 | NA | 64.2 | nc | 0 | No | BSL |
| KWL | Metals | 7440-09-7 | POTASSIUM | 721 | 4520 | MG/KG | 46/46 | 5.4 | 4520 | NA | | | | No | EN |
| KWL | Metals | 7782-49-2 | SELENIUM | 0.062 | 0.33 | MG/KG | 32/46 | 0.056 | 0.33 | NA | 16 | nc | 0 | No | BSL |
| KWL | Metals | 7440-23-5 | SODIUM | 169 | 1720 | MG/KG | 46/46 | 5.9 | 1720 | NA | | | | No | EN |
| KWL | Metals | 7440-66-6 | ZINC | 2.4 | 16.3 | MG/KG | 46/46 | 0.55 | 16.3 | NA | 963 | nc | 0 | No | BSL |
| KWL | PEST/PCB | 72-54-8 | 4,4'-DDD | 0.00022 | 0.042 | MG/KG | 43/46 | 0.00025 | 0.042 | NA | 0.036 | ca | 1 | Yes | ASL |
| KWL | PEST/PCB | 72-55-9 | 4,4'-DDE | 0.00061 | 0.063 | MG/KG | 46/46 | 0.00025 | 0.063 | NA | 0.0254 | ca | 6 | Yes | ASL |
| KWL | PEST/PCB | 319-84-6 | ALPHA-BHC | 0.00016 | 0.00016 | MG/KG | 1/46 | 0.00025 | 0.00016 | NA | 0.00137 | ca | 0 | No | BSL |
| KWL | PEST/PCB | 5103-71-9 | ALPHA-CHLORDANE | 0.00027 | 0.0064 | MG/KG | 23/46 | 0.00025 | 0.0064 | NA | 0.0247 | ca, Chlordane | 0 | No | BSL |
| KWL | PEST/PCB | 11097-69-1 | AROCLOR-1254 | 0.0029 | 0.16 | MG/KG | 46/46 | 0.0017 | 0.16 | NA | 0.00432 | ca | 43 | Yes | ASL |
| KWL | PEST/PCB | 11096-82-5 | AROCLOR-1260 | 0.0023 | 0.066 | MG/KG | 44/46 | 0.00071 | 0.066 | NA | 0.00432 | ca | 37 | Yes | ASL |
| KWL | PEST/PCB | 33213-65-9 | ENDOSULFAN II | 0.00063 | 0.00063 | MG/KG | 1/46 | 0.00025 | 0.00063 | NA | 19.3 | nc, Endosulfan | 0 | No | BSL |
| KWL | PEST/PCB | 72-20-8 | ENDRIN | 0.00033 | 0.009 | MG/KG | 43/46 | 0.00025 | 0.009 | NA | 0.963 | nc | 0 | No | BSL |
| KWL | PEST/PCB | 58-89-9 | GAMMA-BHC (LINDANE) | 0.00065 | 0.00084 | MG/KG | 2/46 | 0.00025 | 0.00084 | NA | 0.00785 | ca | 0 | No | BSL |
| KWL | PEST/PCB | 5103-74-2 | GAMMA-CHLORDANE | 0.00053 | 0.0021 | MG/KG | 5/46 | 0.00025 | 0.0021 | NA | 0.0247 | ca, Chlordane | 0 | No | BSL |
| KWL | PEST/PCB | 1024-57-3 | HEPTACHLOR EPOXIDE | 0.00015 | 0.00041 | MG/KG | 4/46 | 0.00025 | 0.00041 | NA | 0.000949 | ca | 0 | No | BSL |
| KWL | PEST/PCB | 118-74-1 | HEXACHLOROBENZENE | 0.000093 | 0.00098 | MG/KG | 24/46 | 0.00025 | 0.00098 | NA | 0.0054 | ca | 0 | No | BSL |
| KWL | SVOC | 91-57-6 | 2-METHYLNAPHTHALENE | 0.00071 | 0.00078 | MG/KG | 2/46 | 0.00054 | 0.00078 | NA | 12.8 | nc | 0 | No | BSL |
| KWL | SVOC | 83-32-9 | ACENAPHTHENE | 0.00029 | 0.0012 | MG/KG | 28/46 | 0.0003 | 0.0012 | NA | 193 | nc | 0 | No | BSL |
| KWL | SVOC | 98-86-2 | ACETOPHENONE | 0.033 | 0.11 | MG/KG | 37/46 | 0.028 | 0.11 | NA | 321 | nc | 0 | No | BSL |
| KWL | SVOC | 120-12-7 | ANTHRACENE | 0.00038 | 0.00046 | MG/KG | 2/46 | 0.00036 | 0.00046 | NA | 963 | nc | 0 | No | BSL |
| KWL | SVOC | 56-55-3 | BENZO(A)ANTHRACENE | 0.0012 | 0.0012 | MG/KG | 1/46 | 0.0011 | 0.0012 | NA | 0.0864 | ca | 0 | No | BSL |
| KWL | SVOC | 205-99-2 | BENZO(B)FLUORANTHENE | 0.0014 | 0.0014 | MG/KG | 1/46 | 0.00082 | 0.0014 | NA | 0.0864 | ca | 0 | No | BSL |
| KWL | SVOC | 191-24-2 | BENZO(G,H,I)PERYLENE | 0.00077 | 0.00077 | MG/KG | 1/46 | 0.00051 | 0.00077 | NA | 96.3 | nc, Pyrene | 0 | No | BSL |
| KWL | SVOC | 207-08-9 | BENZO(K)FLUORANTHENE | 0.0013 | 0.0013 | MG/KG | 1/46 | 0.0011 | 0.0013 | NA | 0.864 | ca | 0 | No | BSL |
| KWL | SVOC | 50-32-8 | BENZO[A]PYRENE | 0.00093 | 0.00093 | MG/KG | 1/46 | 0.00061 | 0.00093 | NA | 0.00864 | ca | 0 | No | BSL |
| KWL | SVOC | 218-01-9 | CHRYSENE | 0.00054 | 0.002 | MG/KG | 3/46 | 0.00048 | 0.002 | NA | 8.64 | ca | 0 | No | BSL |
| KWL | SVOC | 84-66-2 | DIETHYL PHTHALATE | 0.049 | 0.143 | MG/KG | 8/46 | 0.035 | 0.143 | NA | 2570 | nc | 0 | No | BSL |
| KWL | SVOC | 206-44-0 | FLUORANTHENE | 0.0011 | 0.0032 | MG/KG | 4/46 | 0.0012 | 0.0032 | NA | 128 | nc | 0 | No | BSL |
| KWL | SVOC | 193-39-5 | INDENO(1,2,3-CD)PYRENE | 0.0007 | 0.0007 | MG/KG | 1/46 | 0.00033 | 0.0007 | NA | 0.0864 | ca | 0 | No | BSL |
| KWL | SVOC | 85-01-8 | PHENANTHRENE | 0.0011 | 0.0026 | MG/KG | 16/46 | 0.0011 | 0.0026 | NA | 963 | nc, Anthracene | 0 | No | BSL |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Fish from Kirkwood Lake |
| Exposure Medium: | Tissue |

| Exposure Point | Chemical Group | CAS Number | Chemical | Minimum Detected Concentration (Qualifier) (1) | Maximum Detected Concentration (Qualifier) (1) | Units | Detection Frequency | Range of Detection Limits | Concentration Used for Screening (2) | Background Value (3) | Screening Criteria (4) | Criteria Basis (4) | Exceeds Crit | COPC Flag (Y/N) | Rationale for Selection or Deletion (5) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KWL | SVOC | 129-00-0 | PYRENE | 0.00094 | 0.0038 | MG/KG | 6/46 | 0.00091 | 0.0038 | NA | 96.3 | nc | 0 | No | BSL |
| KWL | Wet Chem | PL | PERCENT LIPIDS | 0.24 | 2.4 | % | 35/46 | 0.23 | 2.4 | NA | | NA | | No | NA |
| KWL | Wet Chem | PS | PERCENT SOLIDS | 11.7 | 23.2 | % | 46/46 | 0.3 | 23.2 | NA | | NA | | No | NA |

Notes:

Only analytes detected in at least one sample are presented.

(1) J - Estimated. + – Value is the average of a parent sample and a field duplicate sample. B – Analyte was detected in an associated blank sample.

(2) The maximum detected concentration was used for the screening.

(3) Maximum detected concentrations from project background locations.

(4) All compounds were screened against the EPA (2017e) Regional Screening Level (RSL) for fish consumption (THQ = 1; Target Cancer Risk = $10^{-5}$), using a fish ingestion rate of 26 g/day. Values were calculated using the EPA RSL Calculator (US EPA, 2017a).

(nc) – Non-cancer. (Surrogate/form) – Surrogate/chemical form used in the absence of chemical-specific screening value.
(ca) – Cancer

(5) Rationale codes:

Selection reason: ASL – Above screening level.
Deletion reason: BSL – Below screening level.
EN – Essential human nutrient.
LDF – Low detection frequency (<5%).

**Table 3.1**
**Exposure Point Concentrations**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Soil |
| Exposure Medium: | Surface Soil (0-2 ft bgs) |

| Exposure Point | Chemical Group | Chemical of Potential Concern | Units | Arithmetic Mean | 95% UCLM | Maximum Concentration | Exposure Point Concentration | Statistic/Rationale | Note |
|---|---|---|---|---|---|---|---|---|---|
| BWL | METALS | ALUMINUM | mg/kg | 2378 | 3803 | 9480 | 3803 | 95% Chebyshev (Mean, Sd) UCL | |
| BWL | METALS | ANTIMONY | mg/kg | 1.1 | 1.4 | 13 | 1.4 | 95% KM (t) UCL | |
| BWL | METALS | ARSENIC | mg/kg | 30 | 115 | 1110 | 115 | 95% KM (Chebyshev) UCL | |
| BWL | METALS | CADMIUM | mg/kg | 0.77 | 2.3 | 18 | 2.3 | 95% KM (Chebyshev) UCL | |
| BWL | METALS | CHROMIUM | mg/kg | 16 | 40 | 280 | 2.0 | 95% Chebyshev (Mean, Sd) UCL | (a) |
| BWL | METALS | COBALT | mg/kg | 0.87 | 1.1 | 4.8 | 1.1 | 95% KM (t) UCL | |
| BWL | METALS | CYANIDE | mg/kg | 0.39 | 0.60 | 4.3 | 0.60 | 95% KM (t) UCL | |
| BWL | METALS | IRON | mg/kg | 4879 | 6261 | 26400 | 6261 | 95% Adjusted Gamma UCL | |
| BWL | METALS | LEAD | mg/kg | 188 | 465 | 3310 | 188 | Arithmetic Mean | |
| BWL | METALS | THALLIUM | mg/kg | 0.95 | 0.85 | 2.3 | 0.85 | 95% KM (t) UCL | |
| BWL | METALS | VANADIUM | mg/kg | 9.5 | 12 | 40 | 12 | 90% Chebyshev (MVUE) UCL | |
| BWL | SVOC | BENZO(A)PYRENE | mg/kg | 0.19 | 0.14 | 0.23 | 0.14 | 95% KM (t) UCL | |
| HC | METALS | ALUMINUM | mg/kg | 7321 | 9199 | 52100 | 9199 | 95% Chebyshev (Mean, Sd) UCL | |
| HC | METALS | ANTIMONY | mg/kg | 4.0 | 5.3 | 208 | 5.3 | 95% KM (t) UCL | |
| HC | METALS | ARSENIC | mg/kg | 275 | 497 | 4880 | 497 | 97.5% KM (Chebyshev) UCL | |
| HC | METALS | BARIUM | mg/kg | 1172 | 1943 | 22600 | 1943 | 95% Chebyshev (Mean, Sd) UCL | |
| HC | METALS | CADMIUM | mg/kg | 2.1 | 2.9 | 28 | 2.9 | 95% KM (Chebyshev) UCL | |
| HC | METALS | CHROMIUM | mg/kg | 396 | 643 | 10100 | 32 | 95% Chebyshev (Mean, Sd) UCL | (a) |
| HC | METALS | COBALT | mg/kg | 4.6 | 6.3 | 48 | 6.3 | 95% KM (Chebyshev) UCL | |
| HC | METALS | COPPER | mg/kg | 87 | 143 | 1700 | 143 | 97.5% KM (Chebyshev) UCL | |
| HC | METALS | CYANIDE | mg/kg | 25 | 49 | 495 | 49 | 97.5% KM (Chebyshev) UCL | |
| HC | METALS | IRON | mg/kg | 20952 | 27559 | 194000 | 27559 | 95% Chebyshev (Mean, Sd) UCL | |
| HC | METALS | LEAD | mg/kg | 3273 | 5901 | 114000 | 3273 | Arithmetic Mean | |
| HC | METALS | MANGANESE | mg/kg | 225 | 339 | 3910 | 339 | 95% Chebyshev (Mean, Sd) UCL | |
| HC | METALS | MERCURY | mg/kg | 0.54 | 0.77 | 9.3 | 0.77 | 95% KM (Chebyshev) UCL | |
| HC | METALS | NICKEL | mg/kg | 9.7 | 14 | 214 | 14 | 95% KM (Chebyshev) UCL | |
| HC | METALS | THALLIUM | mg/kg | 0.92 | 0.66 | 4.3 | 0.66 | 95% KM (t) UCL | |
| HC | METALS | VANADIUM | mg/kg | 25 | 30 | 114 | 30 | 95% Chebyshev (Mean, Sd) UCL | |
| HC | METALS | ZINC | mg/kg | 334 | 532 | 4900 | 532 | 97.5% KM (Chebyshev) UCL | |
| HC | PEST/PCB | AROCLOR-1254 | mg/kg | 0.068 | 0.055 | 1.4 | 0.055 | 95% KM (t) UCL | |
| HC | PEST/PCB | AROCLOR-1260 | mg/kg | 0.14 | 0.17 | 1.6 | 0.17 | 95% KM (t) UCL | |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Soil |
| Exposure Medium: | Surface Soil (0-2 ft bgs) |

| Exposure Point | Chemical Group | Chemical of Potential Concern | Units | Arithmetic Mean | 95% UCLM | Maximum Concentration | Exposure Point Concentration | Statistic/Rationale | Note |
|---|---|---|---|---|---|---|---|---|---|
| HC | SVOC | BENZO(A)ANTHRACENE | mg/kg | 0.81 | 1.6 | 29 | 1.6 | 97.5% KM (Chebyshev) UCL | |
| HC | SVOC | BENZO(A)PYRENE | mg/kg | 0.91 | 1.8 | 29 | 1.8 | 97.5% KM (Chebyshev) UCL | |
| HC | SVOC | BENZO(B)FLUORANTHENE | mg/kg | 1.1 | 2.0 | 29 | 2.0 | 97.5% KM (Chebyshev) UCL | |
| HC | SVOC | BENZO(K)FLUORANTHENE | mg/kg | 0.95 | 1.8 | 27 | 1.8 | 97.5% KM (Chebyshev) UCL | |
| HC | SVOC | DIBENZO(A,H)ANTHRACENE | mg/kg | 0.36 | 0.30 | 2.8 | 0.30 | 95% KM (Chebyshev) UCL | |
| HC | SVOC | INDENO(1,2,3-CD)PYRENE | mg/kg | 0.52 | 0.77 | 7.0 | 0.77 | 97.5% KM (Chebyshev) UCL | |
| HC | SVOC | NAPHTHALENE | mg/kg | 0.50 | 0.27 | 15 | 0.27 | 95% KM (BCA) UCL | |
| KWL | METALS | ALUMINUM | mg/kg | 3222 | 4586 | 14200 | 4586 | 90% Chebyshev (MVUE) UCL | |
| KWL | METALS | ANTIMONY | mg/kg | 2.8 | 3.6 | 29 | 3.6 | 95% KM (t) UCL | |
| KWL | METALS | ARSENIC | mg/kg | 6.3 | 8.4 | 25 | 8.4 | 95% KM (BCA) UCL | |
| KWL | METALS | CHROMIUM | mg/kg | 14 | 18 | 66 | 0.92 | 95% Adjusted Gamma UCL | (a) |
| KWL | METALS | COBALT | mg/kg | 1.2 | 0.87 | 3.6 | 0.87 | 95% KM (t) UCL | |
| KWL | METALS | CYANIDE | mg/kg | 0.27 | 0.37 | 2.7 | 0.37 | 95% KM (BCA) UCL | |
| KWL | METALS | IRON | mg/kg | 6079 | 7843 | 21500 | 7843 | 95% Adjusted Gamma UCL | |
| KWL | METALS | LEAD | mg/kg | 213 | 380 | 1680 | 213 | Arithmetic Mean | |
| KWL | METALS | THALLIUM | mg/kg | 1.1 | NA | 0.44 | 0.44 | Maximum Concentration | |
| KWL | SVOC | BENZO(A)PYRENE | mg/kg | 0.16 | 0.13 | 0.33 | 0.13 | 95% KM (t) UCL | |
| KWL | SVOC | BENZO(B)FLUORANTHENE | mg/kg | 0.16 | 0.26 | 0.99 | 0.26 | 95% KM (Chebyshev) UCL | |

Notes:

Only chemicals identified as COPCs are presented.

NA – The 95% UCLM could not be calculated using ProUCL because there were not enough detected values.

(a) The chromium EPC is calculated by multiplying the total chromium EPC by 5%, on the assumption that 5% of the total chromium concentration is hexavalent chromium.

**Table 3.2**
**Exposure Point Concentrations**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Soil (0-2 ft bgs) |
| Exposure Medium: | Soil Particulates/Volatiles in Air |

| Exposure Point | Chemical Group | Chemical of Potential Concern | Soil Exposure Point Concentration ($EPC_{soil}$) (mg/kg) | Volatilization Factor (VF) ($m^3/kg$) | Modeled Air Concentration ($EPC_{air}$) ($mg/m^3$) |
|---|---|---|---|---|---|
| BWL | METALS | ALUMINUM | 3803 | - | 1.2E-06 |
| BWL | METALS | ANTIMONY | 1.4 | - | 4.4E-10 |
| BWL | METALS | ARSENIC | 115 | - | 3.6E-08 |
| BWL | METALS | CADMIUM | 2.3 | - | 7.1E-10 |
| BWL | METALS | CHROMIUM | 2.0 | - | 6.2E-10 |
| BWL | METALS | COBALT | 1.1 | - | 3.4E-10 |
| BWL | METALS | CYANIDE | 0.60 | 75,481 | 7.9E-06 |
| BWL | METALS | IRON | 6261 | - | 1.9E-06 |
| BWL | METALS | LEAD | 188 | - | 5.8E-08 |
| BWL | METALS | THALLIUM | 0.85 | - | 2.6E-10 |
| BWL | METALS | VANADIUM | 12 | - | 3.9E-09 |
| BWL | SVOC | BENZO(A)PYRENE | 0.14 | - | 4.2E-11 |
| HC | METALS | ALUMINUM | 9199 | - | 2.8E-06 |
| HC | METALS | ANTIMONY | 5.3 | - | 1.6E-09 |
| HC | METALS | ARSENIC | 497 | - | 1.5E-07 |
| HC | METALS | BARIUM | 1943 | - | 6.0E-07 |
| HC | METALS | CADMIUM | 2.9 | - | 9.0E-10 |
| HC | METALS | CHROMIUM | 32 | - | 9.9E-09 |
| HC | METALS | COBALT | 6.3 | - | 1.9E-09 |
| HC | METALS | COPPER | 143 | - | 4.4E-08 |
| HC | METALS | CYANIDE | 49 | 75,481 | 6.5E-04 |
| HC | METALS | IRON | 27559 | - | 8.5E-06 |
| HC | METALS | LEAD | 3273 | - | 1.0E-06 |
| HC | METALS | MANGANESE | 339 | - | 1.0E-07 |
| HC | METALS | MERCURY | 0.77 | - | 2.4E-10 |
| HC | METALS | NICKEL | 14 | - | 4.2E-09 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Soil (0-2 ft bgs) |
| Exposure Medium: | Soil Particulates/Volatiles in Air |

| Exposure Point | Chemical Group | Chemical of Potential Concern | Soil Exposure Point Concentration ($EPC_{soil}$) (mg/kg) | Volatilization Factor (VF) ($m^3$/kg) | Modeled Air Concentration ($EPC_{air}$) ($mg/m^3$) |
|---|---|---|---|---|---|
| HC | METALS | THALLIUM | 0.66 | - | 2.0E-10 |
| HC | METALS | VANADIUM | 30 | - | 9.4E-09 |
| HC | METALS | ZINC | 532 | - | 1.6E-07 |
| HC | PEST/PCB | AROCLOR-1254 | 0.055 | 1,080,012 | 5.1E-08 |
| HC | PEST/PCB | AROCLOR-1260 | 0.17 | 1,684,174 | 9.8E-08 |
| HC | SVOC | BENZO(A)ANTHRACENE | 1.6 | 5,652,776 | 2.8E-07 |
| HC | SVOC | BENZO(A)PYRENE | 1.8 | - | 5.4E-10 |
| HC | SVOC | BENZO(B)FLUORANTHENE | 2.0 | - | 6.2E-10 |
| HC | SVOC | BENZO(K)FLUORANTHENE | 1.8 | - | 5.7E-10 |
| HC | SVOC | DIBENZO(A,H)ANTHRACENE | 0.30 | - | 9.2E-11 |
| HC | SVOC | INDENO(1,2,3-CD)PYRENE | 0.77 | - | 2.4E-10 |
| HC | SVOC | NAPHTHALENE | 0.27 | 59,369 | 4.5E-06 |
| KWL | METALS | ALUMINUM | 4586 | - | 1.4E-06 |
| KWL | METALS | ANTIMONY | 3.6 | - | 1.1E-09 |
| KWL | METALS | ARSENIC | 8.4 | - | 2.6E-09 |
| KWL | METALS | CHROMIUM | 0.92 | - | 2.9E-10 |
| KWL | METALS | COBALT | 0.87 | - | 2.7E-10 |
| KWL | METALS | CYANIDE | 0.37 | 75,481 | 4.9E-06 |
| KWL | METALS | IRON | 7843 | - | 2.4E-06 |
| KWL | METALS | LEAD | 213 | - | 6.6E-08 |
| KWL | METALS | THALLIUM | 0.44 | - | 1.4E-10 |
| KWL | SVOC | BENZO(A)PYRENE | 0.13 | - | 3.9E-11 |
| KWL | SVOC | BENZO(B)FLUORANTHENE | 0.26 | - | 7.9E-11 |

Notes:

Only chemicals identified as COPCs in soil (0-2 ft) are presented.

$EPC_{air} = EPC_{soil} \times (1/VF + 1/PEF)$

| | | |
|---|---|---|
| Volatilization Factor (VF) ($m^3$/kg) = | Chemical-specific | Based on values for Philadelphia (US EPA, 2017a). |
| Particulate Emissions Factor (PEF) ($m^3$/kg)= | 3.2E+09 | Default value for Philadelphia (US EPA, 1996, 2017a). |

**Table 3.3**
**Exposure Point Concentrations**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Sediment |
| Exposure Medium: | Sediment (0-0.5 ft bgs) |

| Exposure Point | Chemical Group | Chemical of Potential Concern | Units | Arithmetic Mean | 95% UCLM | Maximum Concentration | Exposure Point Concentration | Statistic/Rationale | Note |
|---|---|---|---|---|---|---|---|---|---|
| SL | METALS | ALUMINUM | mg/kg | 2301 | 2991 | 10900 | 2991 | 95% Adjusted Gamma UCL | |
| SL | METALS | ANTIMONY | mg/kg | 3.2 | 2.3 | 3.6 | 2.3 | 95% KM (t) UCL | |
| SL | METALS | ARSENIC | mg/kg | 5.3 | 9.8 | 28 | 9.8 | 95% KM (Chebyshev) UCL | |
| SL | METALS | CHROMIUM | mg/kg | 12 | 16 | 53 | 0.80 | 95% Adjusted Gamma UCL | (a) |
| SL | METALS | COBALT | mg/kg | 3.3 | 6.2 | 15 | 6.2 | 95% KM (Chebyshev) UCL | |
| SL | METALS | COPPER | mg/kg | 41 | 101 | 360 | 101 | 95% Chebyshev (Mean, Sd) UCL | |
| SL | METALS | CYANIDE | mg/kg | 1.2 | 2.7 | 7.9 | 2.7 | 97.5% KM (Chebyshev) UCL | |
| SL | METALS | IRON | mg/kg | 5783 | 8020 | 22000 | 8020 | 95% Adjusted Gamma UCL | |
| SL | METALS | LEAD | mg/kg | 170 | 406 | 1630 | 170 | Arithmetic Mean | |
| SL | METALS | MANGANESE | mg/kg | 74 | 109 | 397 | 109 | 95% Adjusted Gamma UCL | |
| SL | METALS | THALLIUM | mg/kg | 1.7 | 0.86 | 6.4 | 0.86 | 95% KM (t) UCL | |
| SL | PEST/PCB | AROCLOR-1254 | mg/kg | 0.041 | 0.065 | 0.23 | 0.065 | 95% KM (t) UCL | |
| SL | SVOC | BENZO(A)ANTHRACENE | mg/kg | 2.4 | 20 | 57 | 20 | 99% KM (Chebyshev) UCL | |
| SL | SVOC | BENZO(A)PYRENE | mg/kg | 2.6 | 15 | 63 | 15 | 97.5% Chebyshev (Mean, Sd) UCL | |
| SL | SVOC | BENZO(B)FLUORANTHENE | mg/kg | 4.9 | 30 | 130 | 30 | 97.5% Chebyshev (Mean, Sd) UCL | |
| SL | SVOC | BENZO(K)FLUORANTHENE | mg/kg | 0.92 | 6.3 | 16 | 6.3 | 99% KM (Chebyshev) UCL | |
| SL | SVOC | CHRYSENE | mg/kg | 3.5 | 30 | 86 | 30 | 99% KM (Chebyshev) UCL | |
| SL | SVOC | DIBENZO(A,H)ANTHRACENE | mg/kg | 0.21 | 1.5 | 4.1 | 1.5 | 99% KM (Chebyshev) UCL | |
| SL | SVOC | INDENO(1,2,3-CD)PYRENE | mg/kg | 0.56 | 4.1 | 11 | 4.1 | 99% KM (Chebyshev) UCL | |
| SL | TIC | BENZO[J]FLUORANTHENE | mg/kg | 5.6 | 15 | 12 | 12 | Maximum Concentration | |
| BWL | METALS | ALUMINUM | mg/kg | 13022 | 14676 | 28000 | 14676 | 95% Student's-t UCL | |
| BWL | METALS | ANTIMONY | mg/kg | 6.3 | 7.3 | 38 | 7.3 | 95% KM (t) UCL | |
| BWL | METALS | ARSENIC | mg/kg | 242 | 284 | 1070 | 284 | 95% Student's-t UCL | |
| BWL | METALS | CADMIUM | mg/kg | 11 | 13 | 39 | 13 | 95% KM (t) UCL | |
| BWL | METALS | CHROMIUM | mg/kg | 108 | 155 | 395 | 7.8 | 95% Chebyshev (Mean, Sd) UCL | (a) |
| BWL | METALS | COBALT | mg/kg | 12 | 17 | 34 | 17 | 95% KM (Chebyshev) UCL | |
| BWL | METALS | COPPER | mg/kg | 141 | 176 | 566 | 176 | 95% Approximate Gamma UCL | |
| BWL | METALS | CYANIDE | mg/kg | 7.5 | 15 | 198 | 15 | 95% KM (BCA) UCL | |
| BWL | METALS | IRON | mg/kg | 34653 | 42168 | 163000 | 42168 | 95% Approximate Gamma UCL | |
| BWL | METALS | LEAD | mg/kg | 1485 | 1742 | 5840 | 1485 | Arithmetic Mean | |
| BWL | METALS | MANGANESE | mg/kg | 91 | 110 | 569 | 110 | 95% Approximate Gamma UCL | |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Sediment |
| Exposure Medium: | Sediment (0-0.5 ft bgs) |

| Exposure Point | Chemical Group | Chemical of Potential Concern | Units | Arithmetic Mean | 95% UCLM | Maximum Concentration | Exposure Point Concentration | Statistic/Rationale | Note |
|---|---|---|---|---|---|---|---|---|---|
| BWL | METALS | VANADIUM | mg/kg | 42 | 56 | 79 | 56 | 95% KM (Chebyshev) UCL | |
| BWL | METALS | ZINC | mg/kg | 969 | 1119 | 2540 | 1119 | 95% Student's-t UCL | |
| BWL | PEST/PCB | AROCLOR-1254 | mg/kg | 0.11 | 0.080 | 0.38 | 0.080 | 95% KM (t) UCL | |
| BWL | SVOC | BENZO(A)ANTHRACENE | mg/kg | 0.71 | 1.3 | 6.5 | 1.3 | 95% KM (Chebyshev) UCL | |
| BWL | SVOC | BENZO(A)PYRENE | mg/kg | 0.81 | 1.4 | 6.2 | 1.4 | 95% KM (Chebyshev) UCL | |
| BWL | SVOC | BENZO(B)FLUORANTHENE | mg/kg | 1.1 | 2.0 | 9.9 | 2.0 | 95% KM (Chebyshev) UCL | |
| BWL | SVOC | BENZO(K)FLUORANTHENE | mg/kg | 1.0 | 2.0 | 9.7 | 2.0 | 95% KM (Chebyshev) UCL | |
| BWL | SVOC | DIBENZO(A,H)ANTHRACENE | mg/kg | 0.68 | 0.29 | 1.0 | 0.29 | 95% KM (t) UCL | |
| BWL | SVOC | INDENO(1,2,3-CD)PYRENE | mg/kg | 0.47 | 0.75 | 3.8 | 0.75 | 95% KM (Chebyshev) UCL | |
| BWL | SVOC | NAPHTHALENE | mg/kg | 1.3 | 2.8 | 25 | 2.8 | 95% KM (Chebyshev) UCL | |
| BWL | VOC | TRICHLOROETHYLENE (TCE) | mg/kg | 0.071 | 0.067 | 0.50 | 0.067 | 95% KM (t) UCL | |
| HC | METALS | ALUMINUM | mg/kg | 7300 | 8312 | 30900 | 8312 | 95% Approximate Gamma UCL | |
| HC | METALS | ANTIMONY | mg/kg | 2.5 | 2.5 | 17 | 2.5 | 95% KM (t) UCL | |
| HC | METALS | ARSENIC | mg/kg | 187 | 386 | 4460 | 386 | 95% KM (Chebyshev) UCL | |
| HC | METALS | BARIUM | mg/kg | 558 | 1005 | 7950 | 1005 | 95% Chebyshev (Mean, Sd) UCL | |
| HC | METALS | CADMIUM | mg/kg | 3.1 | 4.5 | 17 | 4.5 | 95% KM (Chebyshev) UCL | |
| HC | METALS | CHROMIUM | mg/kg | 247 | 441 | 3430 | 22 | 95% Chebyshev (Mean, Sd) UCL | (a) |
| HC | METALS | COBALT | mg/kg | 3.8 | 5.0 | 14 | 5.0 | 95% KM (Chebyshev) UCL | |
| HC | METALS | COPPER | mg/kg | 111 | 170 | 1400 | 170 | 90% Chebyshev (MVUE) UCL | |
| HC | METALS | CYANIDE | mg/kg | 18 | 48 | 360 | 48 | 97.5% KM (Chebyshev) UCL | |
| HC | METALS | IRON | mg/kg | 13108 | 17121 | 46200 | 17121 | 95% Chebyshev (Mean, Sd) UCL | |
| HC | METALS | LEAD | mg/kg | 2860 | 4802 | 39200 | 2860 | Arithmetic Mean | |
| HC | METALS | MANGANESE | mg/kg | 72 | 81 | 323 | 81 | 95% Approximate Gamma UCL | |
| HC | METALS | NICKEL | mg/kg | 14 | 33 | 549 | 33 | 95% Chebyshev (Mean, Sd) UCL | |
| HC | METALS | THALLIUM | mg/kg | 2.1 | 1.6 | 9.9 | 1.6 | 95% KM (t) UCL | |
| HC | METALS | VANADIUM | mg/kg | 18 | 24 | 81 | 24 | 95% Chebyshev (Mean, Sd) UCL | |
| HC | METALS | ZINC | mg/kg | 324 | 486 | 2770 | 486 | 90% Chebyshev (MVUE) UCL | |
| HC | PEST/PCB | AROCLOR-1254 | mg/kg | 0.11 | 0.14 | 1.3 | 0.14 | 95% KM (t) UCL | |
| HC | PEST/PCB | AROCLOR-1260 | mg/kg | 0.056 | 0.058 | 0.29 | 0.058 | 95% KM (t) UCL | |
| HC | SVOC | BENZO(A)ANTHRACENE | mg/kg | 0.60 | 0.71 | 6.0 | 0.71 | 95% KM (BCA) UCL | |
| HC | SVOC | BENZO(A)PYRENE | mg/kg | 0.60 | 0.70 | 5.0 | 0.70 | 95% KM (BCA) UCL | |
| HC | SVOC | BENZO(B)FLUORANTHENE | mg/kg | 0.69 | 0.95 | 4.6 | 0.95 | 95% KM (Chebyshev) UCL | |
| HC | SVOC | DIBENZO(A,H)ANTHRACENE | mg/kg | 0.37 | 0.19 | 1.3 | 0.19 | 95% KM (t) UCL | |
| HC | SVOC | INDENO(1,2,3-CD)PYRENE | mg/kg | 0.37 | 0.39 | 2.6 | 0.39 | 95% KM (BCA) UCL | |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Sediment |
| Exposure Medium: | Sediment (0-0.5 ft bgs) |

| Exposure Point | Chemical Group | Chemical of Potential Concern | Units | Arithmetic Mean | 95% UCLM | Maximum Concentration | Exposure Point Concentration | Statistic/Rationale | Note |
|---|---|---|---|---|---|---|---|---|---|
| KWL | METALS | ALUMINUM | mg/kg | 13988 | 16110 | 44100 | 16110 | 95% Approximate Gamma UCL | |
| KWL | METALS | ANTIMONY | mg/kg | 2.3 | 2.0 | 17 | 2.0 | 95% KM (t) UCL | |
| KWL | METALS | ARSENIC | mg/kg | 67 | 88 | 277 | 88 | 95% Chebyshev (Mean, Sd) UCL | |
| KWL | METALS | CADMIUM | mg/kg | 5.2 | 7.7 | 16 | 7.7 | 97.5% KM (Chebyshev) UCL | |
| KWL | METALS | CHROMIUM | mg/kg | 127 | 173 | 696 | 8.6 | 95% Chebyshev (Mean, Sd) UCL | (a) |
| KWL | METALS | COBALT | mg/kg | 6.7 | 8.6 | 17 | 8.6 | 95% KM (Chebyshev) UCL | |
| KWL | METALS | COPPER | mg/kg | 154 | 209 | 462 | 209 | 95% Chebyshev (Mean, Sd) UCL | |
| KWL | METALS | CYANIDE | mg/kg | 2.8 | 4.1 | 72 | 4.1 | 95% KM (BCA) UCL | |
| KWL | METALS | IRON | mg/kg | 20906 | 26538 | 52700 | 26538 | 95% Chebyshev (Mean, Sd) UCL | |
| KWL | METALS | LEAD | mg/kg | 1015 | 1415 | 6720 | 1015 | Arithmetic Mean | |
| KWL | METALS | MANGANESE | mg/kg | 106 | 142 | 383 | 142 | 95% Chebyshev (Mean, Sd) UCL | |
| KWL | METALS | NICKEL | mg/kg | 21 | 37 | 471 | 37 | 95% KM (Chebyshev) UCL | |
| KWL | METALS | THALLIUM | mg/kg | 1.2 | 0.47 | 9.8 | 0.47 | 95% KM (t) UCL | |
| KWL | METALS | VANADIUM | mg/kg | 24 | 26 | 106 | 26 | 95% Approximate Gamma UCL | |
| KWL | PEST/PCB | AROCLOR-1254 | mg/kg | 0.17 | 0.16 | 0.51 | 0.16 | 95% KM (t) UCL | |
| KWL | SVOC | BENZO(A)ANTHRACENE | mg/kg | 0.55 | 1.1 | 15 | 1.1 | 95% KM (Chebyshev) UCL | |
| KWL | SVOC | BENZO(A)PYRENE | mg/kg | 0.61 | 1.1 | 11 | 1.1 | 95% KM (Chebyshev) UCL | |
| KWL | SVOC | BENZO(B)FLUORANTHENE | mg/kg | 0.75 | 1.4 | 15 | 1.4 | 95% KM (Chebyshev) UCL | |
| KWL | SVOC | BENZO(K)FLUORANTHENE | mg/kg | 0.73 | 1.2 | 11 | 1.2 | 95% KM (Chebyshev) UCL | |
| KWL | SVOC | DIBENZO(A,H)ANTHRACENE | mg/kg | 0.39 | 0.16 | 1.4 | 0.16 | 95% KM (t) UCL | |
| KWL | SVOC | INDENO(1,2,3-CD)PYRENE | mg/kg | 0.30 | 0.42 | 3.2 | 0.42 | 95% KM (Chebyshev) UCL | |

Notes:

Only chemicals identified as COPCs are presented.

NA – The 95% UCLM could not be calculated using ProUCL because there were not enough detected values.

(a) The chromium EPC is calculated by multiplying the total chromium EPC by 5%, on the assumption that 5% of the total chromium concentration is hexavalent chromium.

**Table 3.4**
**Exposure Point Concentrations**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Future |
| Medium: | Soil and Sediment |
| Exposure Medium: | Soil and Sediment for Lead Models |

| Exposure Area | Exposed Media | Receptor | Chemical of Potential Concern | Units | Soil Arithmetic Mean | Sediment Arithmetic Mean | EF Soil (days/year) | EF Sediment (days/year) | Exposure Point Concentration | Statistic[1] |
|---|---|---|---|---|---|---|---|---|---|---|
| SL | Sediment (0-0.5 ft bgs) | Adult Recreator | LEAD | mg/kg | NA | 170 | NA | 44 | 170 | Arithmetic mean |
| SL | Sediment (0-0.5 ft bgs) | Adolescent Recreator | LEAD | mg/kg | NA | 170 | NA | 44 | 170 | Arithmetic mean |
| SL | Sediment (0-0.5 ft bgs) | Child Recreator | LEAD | mg/kg | NA | 170 | NA | 44 | 50 | Exposure frequency-adjusted mean[2] |
| SL | Sediment (0-0.5 ft bgs) | Adult Swimmer | LEAD | mg/kg | NA | 170 | NA | 105 | 170 | Arithmetic mean |
| SL | Sediment (0-0.5 ft bgs) | Adolescent Swimmer | LEAD | mg/kg | NA | 170 | NA | 105 | 170 | Arithmetic mean |
| SL | Sediment (0-0.5 ft bgs) | Child Swimmer | LEAD | mg/kg | NA | 170 | NA | 105 | 170 | Arithmetic mean |
| HC | Soil (0-2 ft bgs)+Sediment (0-0.5 ft bgs) | Adult Recreator | LEAD | mg/kg | 3,273 | 2,860 | 150 | 44 | 4,112 | Weighted mean |
| HC | Soil (0-2 ft bgs)+Sediment (0-0.5 ft bgs) | Adolescent Recreator | LEAD | mg/kg | 3,273 | 2,860 | 150 | 44 | 4,112 | Weighted mean |
| HC | Soil (0-2 ft bgs)+Sediment (0-0.5 ft bgs) | Child Recreator | LEAD | mg/kg | 3,273 | 2,860 | 150 | 44 | 4,112 | Weighted mean |
| BWL | Soil (0-2 ft bgs)+Sediment (0-0.5 ft bgs) | Adult Recreator | LEAD | mg/kg | 188 | 1,485 | 150 | 44 | 623 | Weighted mean |
| BWL | Soil (0-2 ft bgs)+Sediment (0-0.5 ft bgs) | Adolescent Recreator | LEAD | mg/kg | 188 | 1,485 | 150 | 44 | 623 | Weighted mean |
| BWL | Soil (0-2 ft bgs)+Sediment (0-0.5 ft bgs) | Child Recreator | LEAD | mg/kg | 188 | 1,485 | 150 | 44 | 623 | Weighted mean |
| BWL | Sediment (0-0.5 ft bgs) | Adult Swimmer | LEAD | mg/kg | NA | 1,485 | NA | 105 | 1,485 | Arithmetic mean |
| BWL | Sediment (0-0.5 ft bgs) | Adolescent Swimmer | LEAD | mg/kg | NA | 1,485 | NA | 105 | 1,485 | Arithmetic mean |
| BWL | Sediment (0-0.5 ft bgs) | Child Swimmer | LEAD | mg/kg | NA | 1,485 | NA | 105 | 1,485 | Arithmetic mean |
| KWL | Soil (0-2 ft bgs)+Sediment (0-0.5 ft bgs) | Adult Recreator | LEAD | mg/kg | 213 | 1,015 | 150 | 44 | 510 | Weighted mean |
| KWL | Soil (0-2 ft bgs)+Sediment (0-0.5 ft bgs) | Adolescent Recreator | LEAD | mg/kg | 213 | 1,015 | 150 | 44 | 510 | Weighted mean |
| KWL | Soil (0-2 ft bgs)+Sediment (0-0.5 ft bgs) | Child Recreator | LEAD | mg/kg | 213 | 1,015 | 150 | 44 | 510 | Weighted mean |
| KWL | Sediment (0-0.5 ft bgs) | Adult Swimmer | LEAD | mg/kg | NA | 1,015 | NA | 105 | 1,015 | Arithmetic mean |
| KWL | Sediment (0-0.5 ft bgs) | Adolescent Swimmer | LEAD | mg/kg | NA | 1,015 | NA | 105 | 1,015 | Arithmetic mean |
| KWL | Sediment (0-0.5 ft bgs) | Child Swimmer | LEAD | mg/kg | NA | 1,015 | NA | 105 | 1,015 | Arithmetic mean |

Notes:

NA – Medium was not evaluated for this receptor in this exposure area.

(1) Weighted means for Recreators are calculated as: ([soil EPC × 150 days/year] + [sediment EPC × 44 days/year])/(150 days/year).

(2) For the child Recreator in SL, the EPC was calculated as (sediment EPC x 44 days/year)/(150 days/year) to account for exposure frequency (EF) in IEUBK model.

**Table 3.5**
**Exposure Point Concentrations**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Future |
| Medium: | Surface Water |
| Exposure Medium: | Surface Water for Lead Models |

| Exposure Area | Exposed Media | Receptor | Chemical of Potential Concern | Units | Surface Water Mean | Drinking Water Concentration[1] | Surface Water IR (L/day)[2] | Drinking Water IR (L/day)[3] | Exposure Point Concentration | Statistic[4] |
|---|---|---|---|---|---|---|---|---|---|---|
| BWL | Surface Water | Adult Swimmer | LEAD | µg/L | 26 | 4 | 0.134 | 0.50 | 8.6 | Weighted mean |
| BWL | Surface Water | Adolescent Swimmer | LEAD | µg/L | 26 | 4 | 0.134 | 0.50 | 8.6 | Weighted mean |
| BWL | Surface Water | Child Swimmer | LEAD | µg/L | 26 | 4 | 0.134 | 0.50 | 8.6 | Weighted mean |
| KWL | Surface Water | Adult Swimmer | LEAD | µg/L | 29 | 4 | 0.134 | 0.50 | 9.4 | Weighted mean |
| KWL | Surface Water | Adolescent Swimmer | LEAD | µg/L | 29 | 4 | 0.134 | 0.50 | 9.4 | Weighted mean |
| KWL | Surface Water | Child Swimmer | LEAD | µg/L | 29 | 4 | 0.134 | 0.50 | 9.4 | Weighted mean |

Notes:

(1) The drinking water lead concentration is the default value from the IEUBK model.

(2) The surface water ingestion rate (IR) is calculated by multiplying the volume of water ingested during swimming (49 mL/hour) by the 50$^{th}$ percentile value for time spent swimming (US EPA, 2011a).

(3) The drinking water IR is the average of the IRs for each of the age groups in the IEUBK model (0-6 years old).

(4) Weighted means are calculated as: ([drinking water EPC x drinking water IR] + [surface water EPC x surface water IR]) / (drinking water IR + surface water IR).

**Table 3.6**
**Exposure Point Concentrations**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Surface Water |
| Exposure Medium: | Surface Water |

| Exposure Point | Chemical Group | Chemical of Potential Concern | Units | Arithmetic Mean | 95% UCLM | Maximum Concentration | Exposure Point Concentration | Statistic/Rationale |
|---|---|---|---|---|---|---|---|---|
| SL | METALS | ARSENIC | mg/L | 0.0056 | 0.0078 | 0.013 | 0.0078 | 95% KM (t) UCL |
| SL | METALS | CHROMIUM | mg/L | 0.0042 | 0.0026 | 0.0026 | 0.0026 | 95% KM (t) UCL |
| SL | METALS | COBALT | mg/L | 0.0010 | 0.0021 | 0.0080 | 0.0021 | 95% KM (t) UCL |
| SL | METALS | CYANIDE | mg/L | 0.0045 | 0.0044 | 0.0053 | 0.0044 | 95% KM (t) UCL |
| SL | METALS | IRON | mg/L | 3.6 | 11 | 30 | 11 | 95% Chebyshev (Mean, Sd) UCL |
| SL | METALS | MANGANESE | mg/L | 0.30 | 0.95 | 2.5 | 0.95 | 95% Chebyshev (Mean, Sd) UCL |
| SL | SVOC | BENZO(A)ANTHRACENE | mg/L | 0.000058 | 0.000067 | 0.00024 | 0.000067 | 95% KM (t) UCL |
| SL | SVOC | BENZO(A)PYRENE | mg/L | 0.00016 | 0.00020 | 0.00053 | 0.00020 | 95% KM (t) UCL |
| SL | SVOC | BENZO(B)FLUORANTHENE | mg/L | 0.00049 | 0.00013 | 0.00048 | 0.00013 | 95% KM (t) UCL |
| SL | SVOC | BIS(2-ETHYLHEXYL) PHTHALAT | mg/L | 0.0023 | 0.0018 | 0.0058 | 0.0018 | 95% KM (t) UCL |
| SL | SVOC | DIBENZO(A,H)ANTHRACENE | mg/L | 0.00046 | 0.000068 | 0.00010 | 0.000068 | 95% KM (t) UCL |
| SL | SVOC | INDENO(1,2,3-CD)PYRENE | mg/L | 0.000065 | 0.000088 | 0.00027 | 0.000088 | 95% KM (t) UCL |
| BWL | METALS | ALUMINUM | mg/L | 0.44 | 1.3 | 5.3 | 1.3 | 95% Chebyshev (Mean, Sd) UCL |
| BWL | METALS | ANTIMONY | mg/L | 0.0027 | 0.0012 | 0.0042 | 0.0012 | 95% KM (BCA) UCL |
| BWL | METALS | ARSENIC | mg/L | 0.014 | 0.031 | 0.11 | 0.031 | 95% KM (Chebyshev) UCL |
| BWL | METALS | CADMIUM | mg/L | 0.00050 | 0.00062 | 0.0031 | 0.00062 | 95% KM (t) UCL |
| BWL | METALS | CHROMIUM | mg/L | 0.0028 | 0.0045 | 0.025 | 0.0045 | 95% KM (t) UCL |
| BWL | METALS | COBALT | mg/L | 0.00080 | 0.0010 | 0.0031 | 0.0010 | 95% KM (t) UCL |
| BWL | METALS | CYANIDE | mg/L | 0.0016 | 0.0020 | 0.0068 | 0.0020 | 95% KM (t) UCL |
| BWL | METALS | IRON | mg/L | 2.9 | 6.5 | 23 | 6.5 | 95% Chebyshev (Mean, Sd) UCL |
| BWL | METALS | LEAD | mg/L | 0.026 | 0.097 | 0.30 | 0.026 | Arithmetic Mean |
| BWL | METALS | MANGANESE | mg/L | 0.053 | 0.070 | 0.18 | 0.070 | 95% Adjusted Gamma UCL |
| BWL | METALS | THALLIUM | mg/L | 0.0021 | 0.0012 | 0.0056 | 0.0012 | 95% KM (t) UCL |
| BWL | METALS | VANADIUM | mg/L | 0.0015 | 0.0025 | 0.014 | 0.0025 | 95% KM (BCA) UCL |
| BWL | SVOC | BENZO(A)PYRENE | mg/L | 0.0037 | NA | 0.000034 | 0.000034 | Maximum Concentration |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Surface Water |
| Exposure Medium: | Surface Water |

| Exposure Point | Chemical Group | Chemical of Potential Concern | Units | Arithmetic Mean | 95% UCLM | Maximum Concentration | Exposure Point Concentration | Statistic/Rationale |
|---|---|---|---|---|---|---|---|---|
| HC | METALS | ALUMINUM | mg/L | 0.90 | 6.2 | 14 | 6.2 | 99% KM (Chebyshev) UCL |
| HC | METALS | ANTIMONY | mg/L | 0.0022 | 0.0034 | 0.0040 | 0.0034 | 95% KM (t) UCL |
| HC | METALS | ARSENIC | mg/L | 0.030 | 0.11 | 0.33 | 0.11 | 97.5% KM (Chebyshev) UCL |
| HC | METALS | BARIUM | mg/L | 0.22 | 0.45 | 1.5 | 0.45 | 95% Chebyshev (Mean, Sd) UCL |
| HC | METALS | CADMIUM | mg/L | 0.0011 | 0.0025 | 0.020 | 0.0025 | 95% KM (t) UCL |
| HC | METALS | CHROMIUM | mg/L | 0.016 | 0.12 | 0.26 | 0.12 | 99% KM (Chebyshev) UCL |
| HC | METALS | COBALT | mg/L | 0.0014 | 0.0027 | 0.017 | 0.0027 | 95% KM (t) UCL |
| HC | METALS | COPPER | mg/L | 0.013 | 0.028 | 0.19 | 0.028 | 95% KM (BCA) UCL |
| HC | METALS | CYANIDE | mg/L | 0.0055 | 0.0086 | 0.025 | 0.0086 | 95% KM (t) UCL |
| HC | METALS | IRON | mg/L | 4.3 | 14 | 57 | 14 | 95% Chebyshev (Mean, Sd) UCL |
| HC | METALS | LEAD | mg/L | 0.24 | 0.91 | 4.0 | 0.24 | Arithmetic Mean |
| HC | METALS | MANGANESE | mg/L | 0.11 | 0.16 | 0.96 | 0.16 | 95% Adjusted Gamma UCL |
| HC | METALS | MERCURY | mg/L | 0.00010 | 0.00020 | 0.00099 | 0.00020 | 95% KM (t) UCL |
| HC | METALS | THALLIUM | mg/L | 0.0024 | NA | 0.0054 | 0.0054 | Maximum Concentration |
| HC | METALS | VANADIUM | mg/L | 0.0027 | 0.0051 | 0.032 | 0.0051 | 95% KM (BCA) UCL |
| HC | METALS | ZINC | mg/L | 0.11 | 0.48 | 2.2 | 0.48 | 95% Chebyshev (Mean, Sd) UCL |
| KWL | METALS | ALUMINUM | mg/L | 0.47 | 1.4 | 2.6 | 1.4 | 95% Chebyshev (Mean, Sd) UCL |
| KWL | METALS | ANTIMONY | mg/L | 0.0019 | NA | 0.0037 | 0.0037 | Maximum Concentration |
| KWL | METALS | ARSENIC | mg/L | 0.013 | 0.017 | 0.031 | 0.017 | 95% Student's-t UCL |
| KWL | METALS | CHROMIUM | mg/L | 0.0029 | 0.0053 | 0.0094 | 0.0053 | 95% KM (t) UCL |
| KWL | METALS | COBALT | mg/L | 0.0011 | NA | 0.0016 | 0.0016 | Maximum Concentration |
| KWL | METALS | CYANIDE | mg/L | 0.00097 | 0.0018 | 0.0034 | 0.0018 | 95% KM (t) UCL |
| KWL | METALS | IRON | mg/L | 1.8 | 3.6 | 5.5 | 3.6 | 95% Chebyshev (Mean, Sd) UCL |
| KWL | METALS | LEAD | mg/L | 0.029 | 0.065 | 0.099 | 0.029 | Arithmetic Mean |
| KWL | METALS | MANGANESE | mg/L | 0.063 | 0.080 | 0.15 | 0.080 | 95% Student's-t UCL |
| KWL | METALS | THALLIUM | mg/L | 0.0028 | NA | 0.0058 | 0.0058 | Maximum Concentration |

Notes:

Only chemicals identified as COPCs are presented.

NA – The 95% UCLM could not be calculated using ProUCL because there were not enough detected values.

**Table 3.7**
**Exposure Point Concentrations**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Fish |
| Exposure Medium: | Tissue |

| Exposure Point | Chemical Group | Chemical of Potential Concern | Units | Arithmetic Mean | 95% UCLM | Maximum Concentration | Exposure Point Concentration | Statistic/Rationale | Note |
|---|---|---|---|---|---|---|---|---|---|
| KWL | Metals | ARSENIC | mg/kg | 0.090 | 0.10 | 0.23 | 0.01 | 95% KM Adjusted Gamma UCL | (a) |
| KWL | Metals | CHROMIUM | mg/kg | 2.1 | 4.3 | 15 | 0.22 | 95% KM (Chebyshev) UCL | (b) |
| KWL | Metals | LEAD | mg/kg | 0.11 | 0.16 | 1.0 | 0.11 | Arithmetic Mean | |
| KWL | PEST/PCB | 4,4'-DDD | mg/kg | 0.0056 | 0.012 | 0.042 | 0.012 | 95% KM (Chebyshev) UCL | |
| KWL | PEST/PCB | 4,4'-DDE | mg/kg | 0.010 | 0.015 | 0.063 | 0.015 | 90% Chebyshev (MVUE) UCL | |
| KWL | PEST/PCB | AROCLOR-1254 | mg/kg | 0.028 | 0.054 | 0.16 | 0.054 | 95% Chebyshev (Mean, Sd) UCL | |
| KWL | PEST/PCB | AROCLOR-1260 | mg/kg | 0.017 | 0.022 | 0.066 | 0.022 | 95% KM Adjusted Gamma UCL | |

Notes:

Only chemicals identified as COPCs are presented.

NA – Could not calculate using ProUCL because only detected in one sample.

(a) The arsenic EPC is calculated by multiplying the arsenic UCLM by 10%, on the assumption that 10% of the total arsenic in fish is inorganic.

(b) The chromium EPC is calculated by multiplying the total chromium EPC by 5%, on the assumption that 5% of the total chromium concentration is hexavalent chromium.

**Table 4.1**
**Values Used for Daily Intake Calculations**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Current and/or Future |
| Medium: | Soil |
| Exposure Medium: | Soil |

| Exposure Route | Receptor Population | Receptor Age | Exposure Point | Parameter Code | Parameter Definition | Value | Units | Rationale/Reference | Intake Equation/Model Name |
|---|---|---|---|---|---|---|---|---|---|
| Ingestion | Recreator | Adult | BWL HC KWL | CS | Chemical Concentration in Soil | Chemical-specific | mg/kg | | Chronic Daily Intake (CDI) = |
| | | | | IR-S | Ingestion Rate - Soil | 100 | mg/day | Recommended value for adult resident (US EPA, 2014). | (CS x IR-S x B x FS x EF x ED x CF) / (BW x AT) |
| | | | | B | Relative Bioavailability | Chemical-specific | unitless | Chemical-specific. | |
| | | | | FS | Fraction Ingested from Site | 1 | unitless | Professional judgment. | |
| | | | | EF-S | Exposure Frequency | 150 | days/year | 3 days a week for a year (professional judgment). | |
| | | | | ED | Exposure Duration | 26 | years | 90th percentile for time at one residence (US EPA, 2014). | |
| | | | | CF | Conversion Factor | 1E-06 | kg/mg | | |
| | | | | BW | Body Weight | 80 | kg | Weighted mean value (US EPA, 2014). | |
| | | | | AT-C | Averaging Time (Cancer) | 25,550 | days | 70-year lifetime * 365 days. | |
| | | | | AT-N | Averaging Time (Non-cancer) | 9,490 | days | Exposure Duration * 365 days. | |
| | | Adolescent | BWL HC KWL | CS | Chemical Concentration in Soil | Chemical-specific | mg/kg | | Chronic Daily Intake (CDI) = |
| | | | | IR-S | Ingestion Rate - Soil | 100 | mg/day | Recommended value for adult resident (US EPA, 2014). | (CS x IR-S x B x FS x EF x ED x CF) / (BW x AT) |
| | | | | B | Relative Bioavailability | Chemical-specific | unitless | Chemical-specific. | |
| | | | | FS | Fraction Ingested from Site | 1 | unitless | Professional judgment. | |
| | | | | EF-S | Exposure Frequency | 150 | days/year | 3 days a week for a year (professional judgment). | *Mutagenic Compounds:* |
| | | | | ED | Exposure Duration | 10 | years | Age 6-16 years. | Chronic Daily Intake (CDI) = |
| | | | | CF | Conversion Factor | 1E-06 | kg/mg | | (CS x IR-S x B x FS x EF x ED x CF x ADAF) / (BW x AT) |
| | | | | ADAF | Age-dependent Adjustment Factor | Age-specific | unitless | For mutagenic compounds only. | |
| | | | | BW | Body Weight | 44 | kg | Age-weighted mean body weight for adolescent ages 6-16 years (US EPA, 2011a). | |
| | | | | AT-C | Averaging Time (Cancer) | 25,550 | days | 70-year lifetime * 365 days. | |
| | | | | AT-NC | Averaging Time (Non-cancer) | 3,650 | days | Exposure Duration * 365 days. | |
| | | Child | BWL HC KWL | CS | Chemical Concentration in Soil | Chemical-specific | mg/kg | | Chronic Daily Intake (CDI) = |
| | | | | IR-S | Ingestion Rate - Soil | 200 | mg/day | Recommended value for child resident (US EPA, 2014). | (CS x IR-S x B x FS x EF x ED x CF) / (BW x AT) |
| | | | | B | Relative Bioavailability | Chemical-specific | unitless | Chemical-specific. | |
| | | | | FS | Fraction Ingested from Site | 1 | unitless | Professional judgment. | |
| | | | | EF-S | Exposure Frequency | 150 | days/year | 3 days a week for a year (professional judgment). | *Mutagenic Compounds:* |
| | | | | ED | Exposure Duration | 6 | years | Ages 0-6 years. | Chronic Daily Intake (CDI) = |
| | | | | CF | Conversion Factor | 1E-06 | kg/mg | | (CS x IR-S x B x FS x EF x ED x CF x ADAF) / (BW x AT) |
| | | | | ADAF | Age-dependent Adjustment Factor | Age-specific | unitless | For mutagenic compounds only. | |
| | | | | BW | Body Weight | 15 | kg | US EPA (2014). | |
| | | | | AT-C | Averaging Time (Cancer) | 25,550 | days | 70-year lifetime * 365 days. | |
| | | | | AT-NC | Averaging Time (Non-cancer) | 2,190 | days | Exposure Duration * 365 days. | |

| | |
|---|---|
| Scenario Timeframe: | Current and/or Future |
| Medium: | Soil |
| Exposure Medium: | Soil |

| Exposure Route | Receptor Population | Receptor Age | Exposure Point | Parameter Code | Parameter Definition | Value | Units | Rationale/Reference | Intake Equation/Model Name |
|---|---|---|---|---|---|---|---|---|---|
| Dermal | Recreator | Adult | BWL HC KWL | CS | Chemical Concentration in Soil | Chemical-specific | mg/kg | | Dermal Absorbed Dose = |
| | | | | AF-S | Soil Adherence Factor | 0.07 | $mg/cm^2$ | Recommended value for adult resident (US EPA, 2004a, 2014). | $\frac{CS \times AF \times SA \times ABS \times EF \times ED \times CF}{BW \times AT}$ |
| | | | | SA-S | Surface Area | 6,032 | $cm^2$ | Recommended value for adult resident (US EPA, 2014). | |
| | | | | ABS | Dermal Absorption Fraction | Chemical-specific | unitless | Chemical-specific. | |
| | | | | EF-S | Exposure Frequency | 150 | days/year | 3 days a week for a year (professional judgment). | |
| | | | | ED | Exposure Duration | 26 | years | $90^{th}$ percentile for time at one residence (US EPA, 2014). | |
| | | | | CF | Conversion Factor | 1E-06 | kg/mg | | |
| | | | | BW | Body Weight | 80 | kg | Weighted mean value (US EPA, 2014). | |
| | | | | AT-C | Averaging Time (Cancer) | 25,550 | days | 70-year lifetime * 365 days. | |
| | | | | AT-N | Averaging Time (Non-cancer) | 9,490 | days | Exposure Duration * 365 days. | |
| | | Adolescent | BWL HC KWL | CS | Chemical Concentration in Soil | Chemical-specific | mg/kg | | Dermal Absorbed Dose = |
| | | | | AF-S | Soil Adherence Factor | 0.07 | $mg/cm^2$ | Recommended value for adult resident (US EPA, 2004a, 2014). | $\frac{CS \times AF \times SA \times ABS \times EF \times ED \times CF}{BW \times AT}$ |
| | | | | SA-S | Surface Area | 4,639 | $cm^2$ | Age-weighted mean skin surface area (head, hands, forearms, lower legs, and feet) (US EPA, 2011a). | |
| | | | | ABS | Dermal Absorption Fraction | Chemical-specific | unitless | Chemical-specific. | |
| | | | | EF-S | Exposure Frequency | 150 | days/year | 3 days a week for a year (professional judgment). | |
| | | | | ED | Exposure Duration | 10 | years | Ages 6-16 years. | |
| | | | | CF | Conversion Factor | 1E-06 | kg/mg | | |
| | | | | ADAF | Age-dependent Adjustment Factor | Age-specific | unitless | For mutagenic compounds only. | |
| | | | | BW | Body Weight | 44 | kg | Age-weighted mean body weight for adolescent ages 6-16 years (US EPA, 2011a). | |
| | | | | AT-C | Averaging Time (Cancer) | 25,550 | days | 70-year lifetime * 365 days. | |
| | | | | AT-N | Averaging Time (Non-cancer) | 3,650 | days | Exposure Duration * 365 days. | |
| | | Child | BWL HC KWL | CS | Chemical Concentration in Soil | Chemical-specific | mg/kg | | Dermal Absorbed Dose = |
| | | | | AF-S | Soil Adherence Factor | 0.2 | $mg/cm^2$ | US EPA (2014). | $\frac{CS \times AF \times SA \times ABS \times EF \times ED \times CF}{BW \times AT}$ |
| | | | | SA-S | Surface Area | 2,373 | $cm^2$ | US EPA (2014). | |
| | | | | ABS | Dermal Absorption Fraction | Chemical-specific | unitless | Chemical-specific. | |
| | | | | EF-S | Exposure Frequency | 150 | days/year | 3 days a week for a year (professional judgment). | |
| | | | | ED | Exposure Duration | 6 | years | Ages 0-6 years. | |
| | | | | CF | Conversion Factor | 1E-06 | kg/mg | | |
| | | | | ADAF | Age-dependent Adjustment Factor | Age-specific | unitless | For mutagenic compounds only. | |
| | | | | BW | Body Weight | 15 | kg | US EPA (2014). | |
| | | | | AT-C | Averaging Time (Cancer) | 25,550 | days | 70-year lifetime * 365 days. | |
| | | | | AT-N | Averaging Time (Non-cancer) | 2,190 | days | Exposure Duration * 365 days. | |

| | |
|---|---|
| Scenario Timeframe: | Current and/or Future |
| Medium: | Soil |
| Exposure Medium: | Soil |

| Exposure Route | Receptor Population | Receptor Age | Exposure Point | Parameter Code | Parameter Definition | Value | Units | Rationale/Reference | Intake Equation/Model Name |
|---|---|---|---|---|---|---|---|---|---|
| Inhalation | Recreator | Adult | BWL HC KWL | CS | Chemical Concentration in Soil | Chemical-specific | mg/kg | | Exposure Concentration (EC) = (CS/PEF x ET x EF x ED x CF1 x CF2) / AT |
| | | | | PEF | Particulate Emissions Factor | 3.2E+09 | $m^3$/kg | Default value for Philadelphia (US EPA, 1996, 2017a). | |
| | | | | ET-S | Exposure Time | 8 | hours/day | Professional judgment. | |
| | | | | EF-S | Exposure Frequency | 150 | days/year | 3 days a week for a year (professional judgment). | |
| | | | | ED | Exposure Duration | 26 | years | 90th percentile for time at one residence (US EPA, 2014). | |
| | | | | CF1 | Conversion Factor 1 | 0.042 | days/hours | 1 day / 24 hours. | |
| | | | | CF2 | Conversion Factor 2 | 1,000 | µg/mg | | |
| | | | | AT-C | Averaging Time (Cancer) | 25,550 | days | 70-year lifetime * 365 days. | |
| | | | | AT-NC | Averaging Time (Non-cancer) | 9,490 | days | Exposure Duration * 365 days. | |
| | | Adolescent | BWL HC KWL | CS | Chemical Concentration in Soil | Chemical-specific | mg/kg | | Exposure Concentration (EC) = (CS/PEF x ET x EF x ED x CF1 x CF2) / AT |
| | | | | PEF | Particulate Emissions Factor | 3.2E+09 | $m^3$/kg | Default value for Philadelphia (US EPA, 1996, 2017a). | |
| | | | | ET-S | Exposure Time | 8 | hours/day | Professional judgment. | |
| | | | | EF-S | Exposure Frequency | 150 | days/year | 3 days a week for a year (professional judgment). | *Mutagenic Compounds:* Exposure Concentration (EC) = (CS/PEF x ET x EF x ED x CF1 x CF2 x ADAF) / AT |
| | | | | ED | Exposure Duration | 10 | years | Ages 6-16 years. | |
| | | | | CF1 | Conversion Factor 1 | 0.042 | days/hours | 1 day / 24 hours. | |
| | | | | CF2 | Conversion Factor 2 | 1,000 | µg/mg | | |
| | | | | ADAF | Age-dependent Adjustment Factor | Age-specific | unitless | For mutagenic compounds only. | |
| | | | | AT-C | Averaging Time (Cancer) | 25,550 | days | 70-year lifetime * 365 days. | |
| | | | | AT-N | Averaging Time (Non-cancer) | 3,650 | days | Exposure Duration * 365 days. | |
| | | Child | BWL HC KWL | CS | Chemical Concentration in Soil | Chemical-specific | mg/kg | | Exposure Concentration (EC) = (CS/PEF x ET x EF x ED x CF1 x CF2) / AT |
| | | | | PEF | Particulate Emissions Factor | 3.2E+09 | $m^3$/kg | Default value for Philadelphia (US EPA, 1996, 2017a). | |
| | | | | ET-S | Exposure Time | 8 | hours/day | Professional judgment. | |
| | | | | EF-S | Exposure Frequency | 150 | days/year | 3 days a week for a year (professional judgment). | *Mutagenic Compounds:* Exposure Concentration (EC) = (CS/PEF x ET x EF x ED x CF1 x CF2 x ADAF) / AT |
| | | | | ED | Exposure Duration | 6 | years | Ages 0-6 years. | |
| | | | | CF1 | Conversion Factor 1 | 0.042 | days/hours | 1 day / 24 hours. | |
| | | | | CF2 | Conversion Factor 2 | 1,000 | µg/mg | | |
| | | | | ADAF | Age-dependent Adjustment Factor | Age-specific | unitless | For mutagenic compounds only. | |
| | | | | AT-C | Averaging Time (Cancer) | 25,550 | days | 70-year lifetime * 365 days. | |
| | | | | AT-N | Averaging Time (Non-cancer) | 2,190 | days | Exposure Duration * 365 days. | |
| Ingestion | Early Life Mutagen Exposure | | | $IRS_C$ | Soil Ingestion Rate for 0 to <2 years old | 200 | mg/day | Recommended value for child (US EPA, 2014). | Chronic Daily Intake (CDI) = CS x $IFSM_{adj}$ x B x FS x EF x CF x 1/AT where: $IFSM_{adj}$ = ($ED_{0\text{-}2}$ x $IRS_c$ x 10 x 1/BW)+($ED_{2\text{-}6}$ x $IRS_c$ x 3 x 1/BW)+($ED_{6\text{-}16}$ x $IRS_a$ x 3 x 1/BW)+($ED_{16\text{-}26}$ x $IRS_a$ x 1 x 1/BW) Note: Body weights are age-specific. |
| | | | | $IRS_C$ | Soil Ingestion Rate for 2 to <6 years old | 200 | mg/day | Recommended value for child (US EPA, 2014). | |
| | | | | $IRS_a$ | Soil Ingestion Rate for 6 to <16 years old | 100 | mg/day | Recommended value for adult resident (US EPA, 1991b, 2014). | |
| | | | | $IRS_a$ | Soil Ingestion Rate for 16 to <26 years old | 100 | mg/day | Recommended value for adult resident (US EPA, 1991b, 2014). | |

| | |
|---|---|
| Scenario Timeframe: | Current and/or Future |
| Medium: | Soil |
| Exposure Medium: | Soil |

| Exposure Route | Receptor Population | Receptor Age | Exposure Point | Parameter Code | Parameter Definition | Value | Units | Rationale/Reference | Intake Equation/Model Name |
|---|---|---|---|---|---|---|---|---|---|
| Dermal | Early Life Mutagen Exposure | | | $SA_{0-2}$ | Age-adjusted Surface Area for 0 to <2 years old | 1,954 | $cm^2$ | Mean surface area for this age group (head, forearms, hands, lower legs, feet) (US EPA, 2011a). See Table 4.5. | Chronic Daily Intake (CDI) = CS x DA x $DFSM_{adj}$ x EF x CF x 1/AT<br><br>where: $DFSM_{adj}$ = ($ED_{0-2}$ x $AF_c$ x $SA_{0-2}$ x 10 x 1/BW)+($ED_{2-6}$ x $AF_c$ x $SA_{2-6}$ x 3 x 1/BW)+($ED_{6-16}$ x $AF_a$ x $SA_{6-16}$ x 3 x 1/BW)+($ED_{16-26}$ x $AF_a$ x $SA_{16-26}$ x 1 x 1/BW)<br><br>Note: Body weights are age-specific. |
| | | | | $SA_{2-6}$ | Age-adjusted Surface Area for 2 to <6 years old | 2,591 | $cm^2$ | Mean surface area for this age group (head, forearms, hands, lower legs, feet) (US EPA, 2011a). See Table 4.5. | |
| | | | | $SA_{6-16}$ | Age-adjusted Surface Area for 6 to <16 years old | 4,639 | $cm^2$ | Mean surface area for this age group (head, forearms, hands, lower legs, feet) (US EPA, 2011a). See Table 4.5. | |
| | | | | $SA_{16-26}$ | Age-adjusted Surface Area for 16 to <26 years old | 6,709 | $cm^2$ | Mean surface area for this age group (head, forearms, hands, lower legs, feet) (US EPA, 2011a). See Table 4.5. | |
| Exposure Factors Applicable to All Early Life Mutagen Exposure Pathways | Early Life Mutagen Exposure | | | $ED_{0-2}$ | Exposure Duration 0 to <2 years old | 2 | years | Exposure Duration - Age segment 0-2 years old (US EPA, 2017g). | |
| | | | | $ED_{2-6}$ | Exposure Duration 2 to <6 years old | 4 | years | Exposure Duration - Age segment 2-6 years old (US EPA, 2017g). | |
| | | | | $ED_{6-16}$ | Exposure Duration 6 to <16 years old | 10 | years | Exposure Duration - Age segment 6-16 years old (US EPA, 2017g). | |
| | | | | $ED_{16-26}$ | Exposure Duration 16 to <26 years old | 10 | years | Exposure Duration - Age segment 16-26 years old (US EPA, 2017g). | |
| | | | | $BW_{0-2}$ | Age-adjusted Body Weight for 0 to <2 years old | 9 | kg | Mean body weight for ages within this age group (US EPA, 2011a). See Table 4.5. | |
| | | | | $BW_{2-6}$ | Age-adjusted Body Weight for 2 to <6 years old | 17 | kg | Mean body weight for ages within this age group (US EPA, 2011a). See Table 4.5. | |
| | | | | $BW_{6-16}$ | Age-adjusted Body Weight for 6 to <16 years old | 44 | kg | Mean body weight for ages within this age group (US EPA, 2011a). See Table 4.5. | |
| | | | | $BW_{16-26}$ | Age-adjusted Body Weight for 16 to <26 years old | 76 | kg | Mean body weight for ages within this age group (US EPA, 2011a). See Table 4.5. | |
| | | | | ADAF0-2 | Age-dependent Adjustment Factor for 0 to <2 years old | 10 | unitless | Adjustment for this age group (US EPA, 2005). | |
| | | | | ADAF2-6 | Age-dependent Adjustment Factor for 2 to <6 years old | 3 | unitless | Adjustment for this age group (US EPA, 2005). | |
| | | | | ADAF6-16 | Age-dependent Adjustment Factor for 6 to <16 years old | 3 | unitless | Adjustment for this age group (US EPA, 2005). | |
| | | | | ADAF16-26 | Age-dependent Adjustment Factor for 16 to <26 years old | 1 | unitless | Adjustment for this age group (US EPA, 2005). | |

Note:

Sources: US EPA (1991b, 1996, 2004a, 2005, 2011a, 2014, 2017a,g).

**Table 4.2**
**Values Used for Daily Intake Calculations**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Current and/or Future |
| Medium: | Sediment |
| Exposure Medium: | Sediment |

| Exposure Route | Receptor Population | Receptor Age | Exposure Point | Parameter Code | Parameter Definition | Value | Units | Rationale/Reference | Intake Equation/Model Name |
|---|---|---|---|---|---|---|---|---|---|
| Ingestion | Recreator | Adult | SL<br>BWL<br>HC<br>KWL | CS | Chemical Concentration in Sediment | Chemical-specific | mg/kg | Chemical-specific. | Chronic Daily Intake (CDI) = |
| | | | | IR-D | Ingestion Rate - Sediment | 100 | mg/day | Recommended value for adult resident (US EPA, 2014). | (CS x IR-S x B x FS x EF x ED x CF) / (BW x AT) |
| | | | | B | Relative Bioavailability | Chemical-specific | unitless | Chemical-specific. | |
| | | | | FS | Fraction Ingested from Site | 1 | unitless | Professional judgment. | |
| | | | | EF-D | Exposure Frequency | 44 | days/year | 2 days/week for 5 warmer months (professional judgment). | |
| | | | | ED | Exposure Duration | 26 | years | 90th percentile for time at one residence (US EPA, 2014). | |
| | | | | CF | Conversion Factor | 1E-06 | kg/mg | | |
| | | | | BW | Body Weight | 80 | kg | EPA (2014). | |
| | | | | AT-C | Averaging Time (Cancer) | 25,550 | days | 70-year lifetime * 365 days. | |
| | | | | AT-N | Averaging Time (Non-cancer) | 9,490 | days | Exposure Duration * 365 days. | |
| | | Adolescent | SL<br>BWL<br>HC<br>KWL | CS | Chemical Concentration in Sediment | Chemical-specific | mg/kg | Chemical-specific. | Chronic Daily Intake (CDI) = |
| | | | | IR-D | Ingestion Rate - Sediment | 100 | mg/day | Recommended value for adult resident (US EPA, 2014). | (CS x IR-S x B x FS x EF x ED x CF) / (BW x AT) |
| | | | | B | Relative Bioavailability | Chemical-specific | unitless | Chemical-specific. | |
| | | | | FS | Fraction Ingested from Site | 1 | unitless | Professional judgment. | |
| | | | | EF-D | Exposure Frequency | 44 | days/year | 2 days/week for 5 warmer months (professional judgment). | |
| | | | | ED | Exposure Duration | 10 | years | Ages 6-16 years. | *Mutagenic Compounds:* |
| | | | | CF | Conversion Factor | 1E-06 | kg/mg | | Chronic Daily Intake (CDI) = |
| | | | | ADAF | Age-dependent Adjustment Factor | Age-specific | unitless | For mutagenic compounds only. | (CS x IR-S x B x FS x EF x ED x CF x ADAF) / (BW x AT) |
| | | | | BW | Body Weight | 44 | kg | Age-weighted mean body weight for adolescent ages 6-16 years (US EPA, 2011a). | |
| | | | | AT-C | Averaging Time (Cancer) | 25,550 | days | 70-year lifetime * 365 days. | |
| | | | | AT-N | Averaging Time (Non-cancer) | 3,650 | days | Exposure Duration * 365 days. | |
| | | Child | SL<br>BWL<br>HC<br>KWL | CS | Chemical Concentration in Sediment | Chemical-specific | mg/kg | Chemical-specific. | Chronic Daily Intake (CDI) = |
| | | | | IR-D | Ingestion Rate - Sediment | 200 | mg/day | Recommended value for child resident (US EPA, 2014). | (CS x IR-S x B x FS x EF x ED x CF) / (BW x AT) |
| | | | | B | Relative Bioavailability | Chemical-specific | unitless | Chemical-specific. | |
| | | | | FS | Fraction Ingested from Site | 1 | unitless | Professional judgment. | |
| | | | | EF-D | Exposure Frequency | 44 | days/year | 2 days/week for 5 warmer months (professional judgment). | |
| | | | | ED | Exposure Duration | 6 | years | Ages 0-6 years. | *Mutagenic Compounds:* |
| | | | | CF | Conversion Factor | 1E-06 | kg/mg | | Chronic Daily Intake (CDI) = |
| | | | | ADAF | Age-dependent Adjustment Factor | Age-specific | unitless | For mutagenic compounds only. | (CS x IR-S x B x FS x EF x ED x CF x ADAF) / (BW x AT) |
| | | | | BW | Body Weight | 15 | kg | EPA (2014). | |
| | | | | AT-C | Averaging Time (Cancer) | 25,550 | days | 70-year lifetime * 365 days. | |
| | | | | AT-N | Averaging Time (Non-cancer) | 2,190 | days | Exposure Duration * 365 days. | |

| | |
|---|---|
| Scenario Timeframe: | Current and/or Future |
| Medium: | Sediment |
| Exposure Medium: | Sediment |

| Exposure Route | Receptor Population | Receptor Age | Exposure Point | Parameter Code | Parameter Definition | Value | Units | Rationale/Reference | Intake Equation/Model Name |
|---|---|---|---|---|---|---|---|---|---|
| Ingestion | Swimmer | Adult | SL<br>BWL<br>KWL | CS | Chemical Concentration in Sediment | Chemical-specific | mg/kg | Chemical-specific. | Chronic Daily Intake (CDI) = |
| | | | | IR-D | Ingestion Rate - Sediment | 100 | mg/day | Recommended value for adult resident (US EPA, 2014). | (CS x IR-S x B x FS x EF x ED x CF) / (BW x AT) |
| | | | | B | Relative Bioavailability | Chemical-specific | unitless | Chemical-specific. | |
| | | | | FS | Fraction Ingested from Site | 1 | unitless | Professional judgment. | |
| | | | | EF-D | Exposure Frequency | 105 | days/year | Average number of days per year with temperatures >80°F and precipitation <1" (professional judgment). | |
| | | | | ED | Exposure Duration | 26 | years | 90$^{th}$ percentile for time at one residence (US EPA, 2014). | |
| | | | | CF | Conversion Factor | 1E-06 | kg/mg | | |
| | | | | BW | Body Weight | 80 | kg | EPA (2014). | |
| | | | | AT-C | Averaging Time (Cancer) | 25,550 | days | 70-year lifetime * 365 days. | |
| | | | | AT-N | Averaging Time (Non-cancer) | 9,490 | days | Exposure Duration * 365 days. | |
| | | Adolescent | SL<br>BWL<br>KWL | CS | Chemical Concentration in Sediment | Chemical-specific | mg/kg | Chemical-specific. | Chronic Daily Intake (CDI) = |
| | | | | IR-D | Ingestion Rate - Sediment | 100 | mg/day | Recommended value for adult resident (US EPA, 2014). | (CS x IR-S x B x FS x EF x ED x CF) / (BW x AT) |
| | | | | B | Relative Bioavailability | Chemical-specific | unitless | Chemical-specific. | |
| | | | | FS | Fraction Ingested from Site | 1 | unitless | Professional judgment. | |
| | | | | EF-D | Exposure Frequency | 105 | days/year | Average number of days per year with temperatures >80°F and precipitation <1" (professional judgment). | |
| | | | | ED | Exposure Duration | 10 | years | Age 6-16 years. | *Mutagenic Compounds:* |
| | | | | CF | Conversion Factor | 1E-06 | kg/mg | | Chronic Daily Intake (CDI) = |
| | | | | ADAF | Age-dependent Adjustment Factor | Age-specific | unitless | For mutagenic compounds only. | (CS x IR-S x B x FS x EF x ED x CF x ADAF) / (BW x AT) |
| | | | | BW | Body Weight | 44 | kg | Age-weighted mean body weight for adolescent ages 6-16 years (US EPA, 2011a). | |
| | | | | AT-C | Averaging Time (Cancer) | 25,550 | days | 70-year lifetime * 365 days. | |
| | | | | AT-N | Averaging Time (Non-cancer) | 3,650 | days | Exposure Duration * 365 days. | |
| | | Child | SL<br>BWL<br>KWL | CS | Chemical Concentration in Sediment | Chemical-specific | mg/kg | Chemical-specific. | Chronic Daily Intake (CDI) = |
| | | | | IR-D | Ingestion Rate - Sediment | 200 | mg/day | Recommended value for child resident (US EPA, 2014). | (CS x IR-S x B x FS x EF x ED x CF) / (BW x AT) |
| | | | | B | Relative Bioavailability | Chemical-specific | unitless | Chemical-specific. | |
| | | | | FS | Fraction Ingested from Site | 1 | unitless | Professional judgment. | |
| | | | | EF-D | Exposure Frequency | 105 | days/year | Average number of days per year with temperatures >80°F and precipitation <1" (professional judgment). | |
| | | | | ED | Exposure Duration | 6 | years | Age 0-6 years. | *Mutagenic Compounds:* |
| | | | | CF | Conversion Factor | 1E-06 | kg/mg | | Chronic Daily Intake (CDI) = |
| | | | | ADAF | Age-dependent Adjustment Factor | Age-specific | unitless | For mutagenic compounds only. | (CS x IR-S x B x FS x EF x ED x CF x ADAF) / (BW x AT) |
| | | | | BW | Body Weight | 15 | kg | EPA (2014). | |
| | | | | AT-C | Averaging Time (Cancer) | 25,550 | days | 70-year lifetime * 365 days. | |
| | | | | AT-N | Averaging Time (Non-cancer) | 2,190 | days | Exposure Duration * 365 days. | |

| | |
|---|---|
| Scenario Timeframe: | Current and/or Future |
| Medium: | Sediment |
| Exposure Medium: | Sediment |

| Exposure Route | Receptor Population | Receptor Age | Exposure Point | Parameter Code | Parameter Definition | Value | Units | Rationale/Reference | Intake Equation/Model Name |
|---|---|---|---|---|---|---|---|---|---|
| Dermal | Recreator | Adult | SL<br>BWL<br>HC<br>KWL | CS | Chemical Concentration in Sediment | Chemical-specific | mg/kg | Chemical-specific. | Dermal Absorbed Dose = |
| | | | | AF-D | Sediment Adherence Factor | 0.2 | $mg/cm^2$ | Recommended value for child resident exposed to wet soils (US EPA, 2004a). | (CS x AF x SA x ABS x EF x ED x CF)<br>(BW x AT) |
| | | | | SA-D | Surface Area | 6,032 | $cm^2$ | Recommended value for adult resident (US EPA, 2014). | |
| | | | | ABS | Dermal Absorption Fraction | Chemical-specific | unitless | | |
| | | | | EF-D | Exposure Frequency | 44 | days/year | 2 days/week for 5 warmer months (professional judgment). | |
| | | | | ED | Exposure Duration | 26 | years | $90^{th}$ percentile for time at one residence (US EPA, 2014). | |
| | | | | CF | Conversion Factor | 1E-06 | kg/mg | | |
| | | | | BW | Body Weight | 80 | kg | EPA (2014). | |
| | | | | AT-C | Averaging Time (Cancer) | 25,550 | days | 70-year lifetime * 365 days. | |
| | | | | AT-N | Averaging Time (Non-cancer) | 9,490 | days | Exposure Duration * 365 days. | |
| | | Adolescent | SL<br>BWL<br>HC<br>KWL | CS | Chemical Concentration in Sediment | Chemical-specific | mg/kg | Chemical-specific. | Chronic Dermal Absorbed Dose (DAD) = |
| | | | | AF-D | Sediment Adherence Factor | 0.2 | $mg/cm^2$ | Recommended value for child resident exposed to wet soils (US EPA, 2004a). | (CS x AF x SA x ABS x EF x ED x CF)<br>(BW x AT) |
| | | | | SA-D | Surface Area | 4,639 | $cm^2$ | Age-weighted mean skin surface area (head, hands, forearms, lower legs, and feet) (US EPA, 2011a). | |
| | | | | ABS | Dermal Absorption Fraction | Chemical-specific | unitless | | |
| | | | | EF-D | Exposure Frequency | 44 | days/year | 2 days/week for 5 warmer months (professional judgment). | |
| | | | | ED | Exposure Duration | 10 | years | Ages 6-16 years. | *Mutagenic Compounds:* |
| | | | | CF | Conversion Factor | 1E-06 | kg/mg | | Chronic Dermal Absorbed Dose (DAD) = |
| | | | | ADAF | Age-dependent Adjustment Factor | Age-specific | unitless | For mutagenic compounds only. | (CS x AF x SA x ABS x EF x ED x CF)<br>(BW x AT) |
| | | | | BW | Body Weight | 44 | kg | Age-weighted mean body weight for adolescent ages 6-16 years (US EPA, 2011a). | |
| | | | | AT-C | Averaging Time (Cancer) | 25,550 | days | 70-year lifetime * 365 days. | |
| | | | | AT-N | Averaging Time (Non-cancer) | 3,650 | days | Exposure Duration * 365 days. | |
| | | Child | SL<br>BWL<br>HC<br>KWL | CS | Chemical Concentration in Sediment | Chemical-specific | mg/kg | Chemical-specific. | Chronic Dermal Absorbed Dose (DAD) = |
| | | | | AF-D | Sediment Adherence Factor | 0.2 | $mg/cm^2$ | Recommended value for child resident exposed to wet soils (US EPA, 2004a). | (CS x AF x SA x ABS x EF x ED x CF)<br>(BW x AT) |
| | | | | SA-D | Surface Area | 2,373 | $cm^2$ | EPA (2014). | |
| | | | | ABS | Dermal Absorption Fraction | Chemical-specific | unitless | | |
| | | | | EF-D | Exposure Frequency | 44 | days/year | 2 days/week for 5 warmer months (professional judgment). | |
| | | | | ED | Exposure Duration | 6 | years | Ages 0-6 years. | *Mutagenic Compounds:* |
| | | | | CF | Conversion Factor | 1E-06 | kg/mg | | Chronic Dermal Absorbed Dose (DAD) = |
| | | | | ADAF | Age-dependent Adjustment Factor | Age-specific | unitless | For mutagenic compounds only. | (CS x AF x SA x ABS x EF x ED x CF)<br>(BW x AT) |
| | | | | BW | Body Weight | 15 | kg | EPA (2014). | |
| | | | | AT-C | Averaging Time (Cancer) | 25,550 | days | 70-year lifetime * 365 days. | |
| | | | | AT-N | Averaging Time (Non-cancer) | 2,190 | days | Exposure Duration * 365 days. | |

| | |
|---|---|
| Scenario Timeframe: | Current and/or Future |
| Medium: | Sediment |
| Exposure Medium: | Sediment |

| Exposure Route | Receptor Population | Receptor Age | Exposure Point | Parameter Code | Parameter Definition | Value | Units | Rationale/Reference | Intake Equation/Model Name |
|---|---|---|---|---|---|---|---|---|---|
| Dermal | Swimmer | Adult | SL<br>BWL<br>KWL | CS | Chemical Concentration in Sediment | Chemical-specific | mg/kg | Chemical-specific. | Chronic Dermal Absorbed Dose (DAD) = |
| | | | | AF-D | Sediment Adherence Factor | 0.2 | $mg/cm^2$ | Recommended value for child resident exposed to wet soils (US EPA, 2004a). | (CS x AF x SA x ABS x EF x ED x CF) / (BW x AT) |
| | | | | SA-D | Surface Area | 6,032 | $cm^2$ | EPA (2014). | |
| | | | | ABS | Dermal Absorption Fraction | Chemical-specific | unitless | | |
| | | | | EF-D | Exposure Frequency | 105 | days/year | Average number of days per year with temperatures >80°F and precipitation <1" (professional judgment). | |
| | | | | ED | Exposure Duration | 26 | years | $90^{th}$ percentile for time at one residence (US EPA, 2014). | |
| | | | | CF | Conversion Factor | 1E-06 | kg/mg | | |
| | | | | ADAF | Age-dependent Adjustment Factor | Age-specific | unitless | For mutagenic compounds only. | |
| | | | | BW | Body Weight | 80 | kg | EPA (2014). | |
| | | | | AT-C | Averaging Time (Cancer) | 25,550 | days | 70-year lifetime * 365 days. | |
| | | | | AT-N | Averaging Time (Non-cancer) | 9,490 | days | Exposure Duration * 365 days. | |
| | | Adolescent | SL<br>BWL<br>KWL | CS | Chemical Concentration in Sediment | Chemical-specific | mg/kg | Chemical-specific. | Chronic Dermal Absorbed Dose (DAD) = |
| | | | | AF-D | Sediment Adherence Factor | 0.2 | $mg/cm^2$ | Recommended value for child resident exposed to wet soils (US EPA, 2004a). | (CS x AF x SA x ABS x EF x ED x CF) / (BW x AT) |
| | | | | SA-D | Surface Area | 4,639 | $cm^2$ | Age-weighted mean skin surface area (head, hands, forearms, lower legs, and feet) (US EPA, 2011a). | |
| | | | | ABS | Dermal Absorption Fraction | Chemical-specific | unitless | | |
| | | | | EF-D | Exposure Frequency | 105 | days/year | Average number of days per year with temperatures >80°F and precipitation <1" (professional judgment). | |
| | | | | ED | Exposure Duration | 10 | years | Ages 6-16 years. | *Mutagenic Compounds:* |
| | | | | CF | Conversion Factor | 1E-06 | kg/mg | | Chronic Dermal Absorbed Dose (DAD) = |
| | | | | ADAF | Age-dependent Adjustment Factor | Age-specific | unitless | For mutagenic compounds only. | (CS x AF x SA x ABS x EF x ED x CF) / (BW x AT) |
| | | | | BW | Body Weight | 44 | kg | Age-weighted mean body weight for adolescent ages 6-16 years (US EPA, 2011a). | |
| | | | | AT-C | Averaging Time (Cancer) | 25,550 | days | 70-year lifetime * 365 days. | |
| | | | | AT-N | Averaging Time (Non-cancer) | 3,650 | days | Exposure Duration * 365 days. | |

| | |
|---|---|
| Scenario Timeframe: | Current and/or Future |
| Medium: | Sediment |
| Exposure Medium: | Sediment |

| Exposure Route | Receptor Population | Receptor Age | Exposure Point | Parameter Code | Parameter Definition | Value | Units | Rationale/Reference | Intake Equation/Model Name |
|---|---|---|---|---|---|---|---|---|---|
| Dermal | Swimmer | Child | SL<br>BWL<br>KWL | CS | Chemical Concentration in Sediment | Chemical-specific | mg/kg | Chemical-specific. | Chronic Dermal Absorbed Dose (DAD) = |
| | | | | AF-D | Sediment Adherence Factor | 0.2 | $mg/cm^2$ | Recommended value for child resident exposed to wet soils (US EPA, 2004a). | (CS x AF x SA x ABS x EF x ED x CF) / (BW x AT) |
| | | | | SA-D | Surface Area | 2,373 | $cm^2$ | EPA (2014). | |
| | | | | ABS | Dermal Absorption Fraction | Chemical-specific | unitless | Chemical-specific. | |
| | | | | EF-D | Exposure Frequency | 105 | days/year | Average number of days per year with temperatures >80°F and precipitation <1" (professional judgment). | |
| | | | | ED | Exposure Duration | 6 | years | Ages 0-6 years. | *Mutagenic Compounds:* |
| | | | | CF | Conversion Factor | 1E-06 | kg/mg | | Chronic Dermal Absorbed Dose (DAD) = |
| | | | | ADAF | Age-dependent Adjustment Factor | Age-specific | unitless | For mutagenic compounds only. | (CS x AF x SA x ABS x EF x ED x CF) / (BW x AT) |
| | | | | BW | Body Weight | 15 | kg | EPA (2014). | |
| | | | | AT-C | Averaging Time (Cancer) | 25,550 | days | 70-year lifetime * 365 days. | |
| | | | | AT-N | Averaging Time (Non-cancer) | 2,190 | days | Exposure Duration * 365 days. | |

Note:

Sources: US EPA (2004a, 2011a, 2014).

**Table 4.3**
**Values Used for Daily Intake Calculations**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Current and/or Future |
| Medium: | Surface Water |
| Exposure Medium: | Surface Water |

| Exposure Route | Receptor Population | Receptor Age | Exposure Point | Parameter Code | Parameter Definition | Value | Units | Rationale/Reference | Intake Equation/Model Name |
|---|---|---|---|---|---|---|---|---|---|
| Ingestion | Swimmer | Adult | SL<br>BWL<br>KWL | CW | Chemical Concentration in Surface Water | Chemical-specific | mg/L | Chemical-specific. | Chronic Daily Intake (CDI) = |
| | | | | IR-W | Surface Water Ingestion Rate | 0.071 | L/hour | Recommended upper percentile value for ingestion while swimming (US EPA, 2011a). | $\frac{(CW \times IR\text{-}W \times FS \times ET \times EF \times ED)}{(BW \times AT)}$ |
| | | | | FS | Fraction Ingested from Site | 1 | | Assumes 100% ingestion from surface water. | |
| | | | | EF-W | Exposure Frequency | 105 | days/year | Average number of days per year with temperatures >80°F and precipitation <1" (professional judgment). | |
| | | | | ET-W | Exposure Time | 2.50 | hours/day | 50$^{th}$ percentile value for time spent outdoors at a pool/river/lake (US EPA, 2011a). | |
| | | | | ED | Exposure Duration | 26 | years | 90$^{th}$ percentile for time at one residence (US EPA, 2014). | |
| | | | | ADAF | Age-dependent Adjustment Factor | Age-specific | unitless | | |
| | | | | BW | Body Weight | 80 | kg | EPA (2014). | |
| | | | | AT-C | Averaging Time - Cancer | 25,550 | days | 70-year lifetime * 365 days. | |
| | | | | AT-N | Averaging Time - Non-cancer | 9,490 | days | Exposure Duration * 365 days. | |
| | | Adolescent | SL<br>BWL<br>KWL | CW | Chemical Concentration in Surface Water | Chemical-specific | mg/L | Chemical-specific. | Chronic Daily Intake (CDI) = |
| | | | | IR-W | Surface Water Ingestion Rate | 0.071 | L/hour | Recommended upper percentile value for ingestion while swimming (US EPA, 2011a). | $\frac{(CW \times IR\text{-}W \times FS \times ET \times EF \times ED)}{(BW \times AT)}$ |
| | | | | FS | Fraction Ingested from Site | 1 | | Assumes 100% ingestion from surface water. | |
| | | | | EF-W | Exposure Frequency | 105 | days/year | Average number of days per year with temperatures >80°F and precipitation <1" (professional judgment). | |
| | | | | ET-W | Exposure Time | 2.00 | hours/day | 50$^{th}$ percentile value for time spent outdoors at a pool/river/lake (US EPA, 2011a). | |
| | | | | ED | Exposure Duration | 10 | years | Ages 6-16 years. | *Mutagenic Compounds:* |
| | | | | ADAF | Age-dependent Adjustment Factor | Age-specific | unitless | | Chronic Daily Intake (CDI) = |
| | | | | BW | Body Weight | 44 | kg | Age-weighted mean body weight for adolescent ages 6-16 years (US EPA, 2011a). | $\frac{(CW \times IR\text{-}W \times FS \times ET \times EF \times ED \times ADAF)}{(BW \times AT)}$ |
| | | | | AT-C | Averaging Time - Cancer | 25,550 | days | 70-year lifetime * 365 days. | |
| | | | | AT-N | Averaging Time - Non-cancer | 3,650 | days | Exposure Duration * 365 days. | |

| | |
|---|---|
| Scenario Timeframe: | Current and/or Future |
| Medium: | Surface Water |
| Exposure Medium: | Surface Water |

| Exposure Route | Receptor Population | Receptor Age | Exposure Point | Parameter Code | Parameter Definition | Value | Units | Rationale/Reference | Intake Equation/Model Name |
|---|---|---|---|---|---|---|---|---|---|
| Ingestion | Swimmer | Child | SL<br>BWL<br>KWL | CW | Chemical Concentration in Surface Water | Chemical-specific | mg/L | Chemical-specific. | Chronic Daily Intake (CDI) =<br><br>$\frac{(CW \times IR\text{-}W \times FS \times ET \times EV \times EF \times ED)}{(BW \times AT)}$ |
| | | | | IR-W | Surface Water Ingestion Rate | 0.12 | L/day | Recommended upper percentile value for ingestion while swimming (US EPA, 2011a). | |
| | | | | FS | Fraction Ingested from Site | 1 | | Assumes 100% ingestion from surface water. | |
| | | | | EF-W | Exposure Frequency | 105 | days/year | Average number of days per year with temperatures >80°F and precipitation <1" (professional judgment). | |
| | | | | ET-W | Exposure Time | 2.74 | hours/day | 50$^{th}$ percentile value for time spent outdoors at a pool/river/lake (US EPA, 2011a). | |
| | | | | ED | Exposure Duration | 6 | years | Ages 0-6 years. | *Mutagenic Compounds:* |
| | | | | ADAF | Age-dependent Adjustment Factor | Age-specific | unitless | | Chronic Daily Intake (CDI) =<br><br>$\frac{(CW \times IR\text{-}W \times FS \times ET \times EV \times EF \times ED \times ADAF)}{(BW \times AT)}$ |
| | | | | BW | Body Weight | 15 | kg | EPA (2014). | |
| | | | | AT-C | Averaging Time - Cancer | 25,550 | days | 70-year lifetime * 365 days. | |
| | | | | AT-N | Averaging Time - Non-cancer | 2,190 | days | Exposure Duration * 365 days. | |
| Dermal | Recreator | Adult | SL<br>BWL<br>HC<br>KWL | CW | Chemical Concentration in Surface Water | Chemical-specific | mg/L | Chemical-specific. | Dermally Absorbed Dose (DAD) =<br><br>$\frac{(DA_{event} \times EV \times ED \times EF \times SA)}{(BW \times AT)}$ |
| | | | | Kp | Permeability Constant | Chemical-specific | cm/hour | EPA (2004a). | |
| | | | | FA | Fraction Absorbed Water | Chemical-specific | | EPA (2004a). | |
| | | | | tau-event | Lag Time per Event | Chemical-specific | hours/event | EPA (2004a). | |
| | | | | t-event | Event Duration | 1 | hours/event | Professional judgment. | where, for organic compounds: |
| | | | | CF | Volumetric Conversion Factor for Water | 0.001 | L/cm$^3$ | | $DA_{event} = 2 FA \times Kp \times CW \times CF \times SQRT\{(6 \times tau\text{-}event \times t\text{-}event)/pi\}$ |
| | | | | EF-W | Exposure Frequency | 44 | days/year | 2 days/week for 5 warmer months (professional judgment). | or |
| | | | | EV | Event Frequency | 1 | event/day | Professional judgment. | $DA_{event} = FA \times Kp \times CW \times \{(t\text{-}event/(1 + B)) + 2 \times tau\text{-}event \times ( (1 + (3 \times B) + (3 \times B \times B))/(1 + B)2)\}$ |
| | | | | ED | Exposure Duration | 26 | years | 90$^{th}$ percentile for time at one residence (US EPA, 2014). | |
| | | | | SA-W | Skin Surface Area | 6,032 | cm$^2$ | EPA recommended RME value for adult resident (US EPA, 2014). | and where, for inorganic compounds: |
| | | | | B | Ratio of Permeability Coefficient of a Compound Through the Stratum Corneum Relative to its Permeability Coefficient Across the Epidermis | Chemical-specific | | EPA (2004a). | $DA_{event} = Kp \times CW \times CF \times t\text{-}event$ |
| | | | | BW | Body Weight | 80 | kg | EPA (2014). | |
| | | | | AT-C | Averaging Time - Cancer | 25,550 | days | 70-year lifetime * 365 days. | |
| | | | | AT-N | Averaging Time - Non-cancer | 9,490 | days | Exposure Duration * 365 days. | |

| | |
|---|---|
| Scenario Timeframe: | Current and/or Future |
| Medium: | Surface Water |
| Exposure Medium: | Surface Water |

| Exposure Route | Receptor Population | Receptor Age | Exposure Point | Parameter Code | Parameter Definition | Value | Units | Rationale/Reference | Intake Equation/Model Name |
|---|---|---|---|---|---|---|---|---|---|
| Dermal | Recreator | Adolescent | SL<br>BWL<br>HC<br>KWL | CW | Chemical Concentration in Surface Water | Chemical-specific | mg/L | Chemical-specific. | Dermally Absorbed Dose (DAD) = |
| | | | | Kp | Permeability Constant | Chemical-specific | cm/hour | EPA (2004a). | $\frac{(DA_{event} \times EV \times ED \times EF \times SA)}{(BW \times AT)}$ |
| | | | | FA | Fraction Absorbed Water | Chemical-specific | | EPA (2004a). | |
| | | | | tau-event | Lag Time per Event | Chemical-specific | hours/event | EPA (2004a). | |
| | | | | t-event | Event Duration | 1 | hours/event | Professional judgment. | where, for organic compounds: |
| | | | | CF | Volumetric Conversion Factor for Water | 0.001 | $L/cm^3$ | | $DA_{event}$ = 2 FA x Kp x CW x CF x SQRT{(6 x tau-event x t-event)/pi} |
| | | | | EF-W | Exposure Frequency | 44 | days/year | 2 days/week for 5 warmer months (professional judgment). | or |
| | | | | EV | Event Frequency | 1 | event/day | Professional judgment. | $DA_{event}$ = FA x Kp x CW x {(t-event/(1 + B)) + 2 x tau-event x ( (1 + (3 x B) + (3 x B x B))/(1 + B)2)} |
| | | | | ED | Exposure Duration | 10 | years | Ages 6-16 years. | |
| | | | | SA-W | Skin Surface Area | 4,639 | $cm^2$ | Age-weighted mean skin surface area (head, hands, forearms, lower legs, and feet) (US EPA, 2011a). | and where, for inorganic compounds: |
| | | | | B | Ratio of Permeability Coefficient of a Compound Through the Stratum Corneum Relative to Its Permeability Coefficient Across the Epidermis | Chemical-specific | | EPA (2004a). | $DA_{event}$ = Kp x CW x CF x t-event |
| | | | | ADAF | Age-dependent Adjustment Factor | Age-specific | unitless | For mutagenic compounds only. | *Mutagenic Compounds:* |
| | | | | BW | Body Weight | 44 | kg | Age-weighted mean body weight for adolescent ages 6-16 years (US EPA, 2011a). | Dermally Absorbed Dose (DAD) = |
| | | | | AT-C | Averaging Time - Cancer | 25,550 | days | 70-year lifetime * 365 days. | $\frac{(DA_{event} \times EV \times ED \times EF \times SA \times ADAF)}{(BW \times AT)}$ |
| | | | | AT-N | Averaging Time - Non-cancer | 3,650 | days | Exposure Duration * 365 days. | |
| | | Child | SL<br>BWL<br>HC<br>KWL | CW | Chemical Concentration in Surface Water | Chemical-specific | mg/L | Chemical-specific. | Dermally Absorbed Dose (DAD) = |
| | | | | Kp | Permeability Constant | Chemical-specific | cm/hour | EPA (2004a). | $\frac{(DA_{event} \times EV \times ED \times EF \times SA)}{(BW \times AT)}$ |
| | | | | FA | Fraction Absorbed Water | Chemical-specific | | EPA (2004a). | |
| | | | | tau-event | Lag Time per Event | Chemical-specific | hours/event | EPA (2004a). | |
| | | | | t-event | Event Duration | 1 | hours/event | Professional judgment. | where, for organic compounds: |
| | | | | CF | Volumetric Conversion Factor for Water | 0.001 | $L/cm^3$ | | $DA_{event}$ = 2 FA x Kp x CW x CF x SQRT{(6 x tau-event x t-event)/pi} |
| | | | | EF-W | Exposure Frequency | 44 | days/year | 2 days/week for 5 warmer months (professional judgment). | or |
| | | | | EV | Event Frequency | 1 | event/day | Professional judgment. | $DA_{event}$ = FA x Kp x CW x {(t-event/(1 + B)) + 2 x tau-event x ( (1 + (3 x B) + (3 x B x B))/(1 + B)2)} |
| | | | | ED | Exposure Duration | 6 | years | Ages 0-6 years. | |
| | | | | SA-W | Skin Surface Area | 2,373 | $cm^2$ | Age-weighted mean skin surface area (head, hands, forearms, lower legs, and feet) (US EPA, 2011a). | and where, for inorganic compounds: |

| | |
|---|---|
| Scenario Timeframe: | Current and/or Future |
| Medium: | Surface Water |
| Exposure Medium: | Surface Water |

| Exposure Route | Receptor Population | Receptor Age | Exposure Point | Parameter Code | Parameter Definition | Value | Units | Rationale/Reference | Intake Equation/Model Name |
|---|---|---|---|---|---|---|---|---|---|
| Dermal | Recreator | Child | SL<br>BWL<br>HC<br>KWL | B | Ratio of Permeability Coefficient of a Compound Through the Stratum Corneum Relative to Its Permeability Coefficient Across the Epidermis | Chemical-specific | | EPA (2004a). | $DA_{event}$ = Kp x CW x CF x t-event |
| | | | | ADAF | Age-dependent Adjustment Factor | Age-specific | unitless | For mutagenic compounds only. | *Mutagenic Compounds:* |
| | | | | BW | Body Weight | 15 | kg | EPA (2014). | Dermally Absorbed Dose (DAD) = |
| | | | | AT-C | Averaging Time - Cancer | 25,550 | days | 70-year lifetime * 365 days. | $\frac{(DA_{event} \times EV \times ED \times EF \times SA \times ADAF)}{(BW \times AT)}$ |
| | | | | AT-N | Averaging Time - Non-cancer | 2,190 | days | Exposure Duration * 365 days. | |
| Dermal | Swimmer | Adult | SL<br>BWL<br>KWL | CW | Chemical Concentration in Surface Water | Chemical-specific | mg/L | Chemical-specific. | Dermally Absorbed Dose (DAD) = |
| | | | | Kp | Permeability Constant | Chemical-specific | cm/hour | EPA (2004a). | $\frac{(DA_{event} \times EV \times ED \times EF \times SA)}{(BW \times AT)}$ |
| | | | | FA | Fraction Absorbed Water | Chemical-specific | | EPA (2004a). | |
| | | | | tau-event<br>t-event | Lag Time per Event<br>Event Duration | Chemical-specific<br>2.28 | hours/event<br>hours/event | EPA (2004a).<br>$50^{th}$ percentile value for time spent outdoors at a pool/river/lake (US EPA, 2011a). | where, for organic compounds: |
| | | | | CF | Volumetric Conversion Factor for Water | 0.001 | $L/cm^3$ | | $DA_{event}$ = 2 FA x Kp x CW x CF x SQRT{(6 x tau-event x t-event)/pi} |
| | | | | EF-W | Exposure Frequency | 105 | days/year | Average number of days per year with temperatures >80°F and precipitation <1" (professional judgment). | or |
| | | | | EV | Event Frequency | 1 | events/day | Professional judgment. | $DA_{event}$ = FA x Kp x CW x {(t-event/(1 + B)) + 2 x tau-event x ( (1 + (3 x B) + (3 x B x B))/(1 + B)2)} |
| | | | | ED | Exposure Duration | 26 | years | $90^{th}$ percentile for time at one residence (US EPA, 2014). | |
| | | | | SA-W | Skin Surface Area | 19,652 | $cm^2$ | EPA (2014). | and where, for inorganic compounds: |
| | | | | B | Ratio of Permeability Coefficient of a Compound Through the Stratum Corneum Relative to Its Permeability Coefficient Across the Epidermis | Chemical-specific | | EPA (2004a). | $DA_{event}$ = Kp x CW x CF x t-event |
| | | | | BW | Body Weight | 80 | kg | EPA (2014). | |
| | | | | AT-C | Averaging Time - Cancer | 25,550 | days | 70-year lifetime * 365 days. | |
| | | | | AT-N | Averaging Time - Non-cancer | 9,490 | days | Exposure Duration * 365 days. | |

| | |
|---|---|
| Scenario Timeframe: | Current and/or Future |
| Medium: | Surface Water |
| Exposure Medium: | Surface Water |

| Exposure Route | Receptor Population | Receptor Age | Exposure Point | Parameter Code | Parameter Definition | Value | Units | Rationale/Reference | Intake Equation/Model Name |
|---|---|---|---|---|---|---|---|---|---|
| Dermal | Swimmer | Adolescent | SL<br>BWL<br>KWL | CW | Chemical Concentration in Surface Water | Chemical-specific | mg/L | Chemical-specific. | Dermally Absorbed Dose (DAD) = |
| | | | | Kp | Permeability Constant | Chemical-specific | cm/hour | EPA (2004a). | $\frac{(DA_{event} \times EV \times ED \times EF \times SA)}{(BW \times AT)}$ |
| | | | | FA | Fraction Absorbed Water | Chemical-specific | | EPA (2004a). | |
| | | | | tau-event | Lag Time per Event | Chemical-specific | hours/event | EPA (2004a). | |
| | | | | t-event | Event Duration | 2 | hours/event | 50th percentile value for time spent outdoors at a pool/river/lake (US EPA, 2011a). | where, for organic compounds: |
| | | | | CF | Volumetric Conversion Factor for Water | 0.001 | $L/cm^3$ | | $DA_{event}$ = 2 FA x Kp x CW x CF x SQRT{(6 x tau-event x t-event)/pi} |
| | | | | EF-W | Exposure Frequency | 105 | days/year | Average number of days per year with temperatures >80°F and precipitation <1" (professional judgment). | or |
| | | | | EV | Event Frequency | 1 | events/day | Professional judgment. | $DA_{event}$ = FA x Kp x CW x {(t-event/(1 + B)) + 2 x tau-event x ( (1 + (3 x B) + (3 x B x B))/(1 + B)2)} |
| | | | | ED | Exposure Duration | 10 | years | Ages 6-16 years. | |
| | | | | SA-W | Skin Surface Area | 13,350 | $cm^2$ | Age-weighted mean skin surface area (whole body) (US EPA, 2011a). | and where for inorganic compounds, |
| | | | | B | Ratio of Permeability Coefficient of a Compound Through the Stratum Corneum Relative to Its Permeability Coefficient Across the Epidermis | Chemical-specific | | EPA (2004a). | $DA_{event}$ = Kp x CW x CF x t-event |
| | | | SL | ADAF | Age-dependent Adjustment | Age-specific | unitless | For mutagenic compounds only. | *Mutagenic Compounds:* |
| | | | | BW | Body Weight | 44 | kg | Age-weighted mean body weight for adolescent ages 6-16 years (US EPA, 2011a). | Dermally Absorbed Dose (DAD) = |
| | | | | AT-C | Averaging Time - Cancer | 25,550 | days | 70-year lifetime * 365 days. | $\frac{(DA_{event} \times EV \times ED \times EF \times SA \times ADAF)}{(BW \times AT)}$ |
| | | | | AT-N | Averaging Time - Non-cancer | 3,650 | days | Exposure Duration * 365 days. | |

| | |
|---|---|
| Scenario Timeframe: | Current and/or Future |
| Medium: | Surface Water |
| Exposure Medium: | Surface Water |

| Exposure Route | Receptor Population | Receptor Age | Exposure Point | Parameter Code | Parameter Definition | Value | Units | Rationale/Reference | Intake Equation/Model Name |
|---|---|---|---|---|---|---|---|---|---|
| Dermal | Swimmer | Child | SL<br>BWL<br>KWL | CW | Chemical Concentration in Surface Water | Chemical-specific | mg/L | Chemical-specific. | Dermally Absorbed Dose (DAD) = |
| | | | | Kp | Permeability Constant | Chemical-specific | cm/hour | EPA (2004a). | $\frac{(DA_{event} \times EV \times ED \times EF \times SA)}{(BW \times AT)}$ |
| | | | | FA | Fraction Absorbed Water | Chemical-specific | | EPA (2004a). | |
| | | | | tau-event | Lag Time per Event | Chemical-specific | hours/event | EPA (2004a). | |
| | | | | t-event | Event Duration | 2.74 | hours/event | 50th percentile value for time spent outdoors at a pool/river/lake (US EPA, 2011a). | where, for organic compounds: |
| | | | | CF | Volumetric Conversion Factor for Water | 0.001 | $L/cm^3$ | | $DA_{event}$ = 2 FA x Kp x CW x CF x SQRT{(6 x tau-event x t-event)/pi} |
| | | | | EF-W | Exposure Frequency | 105 | days/year | Average number of days per year with temperatures >80°F and precipitation <1" (professional judgment). | or |
| | | | | EV | Event Frequency | 1 | events/day | Professional judgment. | $DA_{event}$ = FA x Kp x CW x {(t-event/(1 + B)) + 2 x tau-event x ( (1 + (3 x B) + (3 x B x B))/(1 + B)2)} |
| | | | | ED | Exposure Duration | 6 | years | Ages 0-6 years. | |
| | | | | SA-W | Skin Surface Area | 6,365 | $cm^2$ | EPA (2014). | and where, for inorganic compounds: |
| | | | | B | Ratio of Permeability Coefficient of a Compound Through the Stratum Corneum Relative to Its Permeability Coefficient Across the Epidermis | Chemical-specific | | EPA (2004a). | $DA_{event}$ = Kp x CW x CF x t-event |
| | | | | ADAF | Age-dependent Adjustment Factor | Age-specific | unitless | For mutagenic compounds only. | *Mutagenic Compounds:* |
| | | | | BW | Body Weight | 15 | kg | EPA (2014). | Dermally Absorbed Dose (DAD) = |
| | | | | AT-C | Averaging Time - Cancer | 25,550 | days | 70-year lifetime * 365 days. | $\frac{(DA_{event} \times EV \times ED \times EF \times SA \times ADAF)}{(BW \times AT)}$ |
| | | | | AT-N | Averaging Time - Non-cancer | 2,190 | days | Exposure Duration * 365 days. | |

Note:

Sources: US EPA (2004a, 2011a, 2014).

**Table 4.4**
**Values Used for Daily Intake Calculations**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Current and/or Future |
| Medium: | Fish |
| Exposure Medium: | Fish |

| Exposure Route | Receptor Population | Receptor Age | Exposure Point | Parameter Code | Parameter Definition | Value | Units | Rationale/Reference | Intake Equation/Model Name |
|---|---|---|---|---|---|---|---|---|---|
| Ingestion | Angler | Adult | KWL | C-F | Chemical Concentration in Fish Tissue | Chemical-specific | mg/kg | Chemical-specific. | Chronic Daily Intake (CDI) = |
| | | | | IR-F | Ingestion Rate - Fish | 0.026 | kg/day | 95th percentile for a recreational freshwater angler (US EPA, 1997). | (CS x IR-F x EF-F x ED) / (BW x AT) |
| | | | | EF-F | Exposure Frequency | 365 | days/year | | |
| | | | | ED | Exposure Duration | 26 | years | 90th percentile for time at one residence (US EPA, 2014). | |
| | | | | BW | Body Weight | 80 | kg | EPA (2014). | |
| | | | | AT-C | Averaging Time (Cancer) | 25,550 | days | 70-year lifetime * 365 days. | |
| | | | | AT-N | Averaging Time (Non-cancer) | 9,490 | days | Exposure Duration * 365 days. | |
| | | Adolescent | KWL | C-F | Chemical Concentration in Fish Tissue | Chemical-specific | mg/kg | Chemical-specific. | Chronic Daily Intake (CDI) = |
| | | | | IR-F | Ingestion Rate - Fish | 0.017 | kg/day | Adjusted from adult intake value based on body weight. | (CS x IR-F x EF-F x ED) / (BW x AT) |
| | | | | EF-F | Exposure Frequency | 365 | days/year | | |
| | | | | ED | Exposure Duration | 10 | years | Ages 6-16 years. | |
| | | | | ADAF | Age-dependent Adjustment Factor | Age-specific | unitless | For mutagenic compounds only. | *Mutagenic Compounds:* |
| | | | | BW | Body Weight | 44 | kg | Age-weighted mean body weight for adolescent ages 6-16 years (US EPA, | Chronic Daily Intake (CDI) = |
| | | | | AT-C | Averaging Time (Cancer) | 25,550 | days | 70-year lifetime * 365 days. | (CS x IR-F x EF-F x ED x ADAF) / (BW x AT) |
| | | | | AT-N | Averaging Time (Non-cancer) | 3,650 | days | Exposure Duration * 365 days. | |
| | | Child | KWL | C-F | Chemical Concentration in Fish Tissue | Chemical-specific | mg/kg | Chemical-specific. | Chronic Daily Intake (CDI) = |
| | | | | IR-F | Ingestion Rate - Fish | 0.009 | kg/day | Adjusted from adult intake value based on body weight. | (CS x IR-F x EF-F x ED) / (BW x AT) |
| | | | | EF-F | Exposure Frequency | 365 | days/year | | |
| | | | | ED | Exposure Duration | 6 | years | Ages 0-6 years. | |
| | | | | ADAF | Age-dependent Adjustment Factor | Age-specific | unitless | For mutagenic compounds only. | *Mutagenic Compounds:* |
| | | | | BW | Body Weight | 15 | kg | US EPA, 2014. | Chronic Daily Intake (CDI) = |
| | | | | AT-C | Averaging Time (Cancer) | 25,550 | days | 70 year lifetime * 365 days. | (CS x IR-F x EF-F x ED x ADAF) / (BW x AT) |
| | | | | AT-N | Averaging Time (Non-cancer) | 2,190 | days | Exposure Duration * 365 days. | |

Note:

Sources: US EPA (1997, 2011a, 2014).

**Table 4.5**
**Age-adjusted Exposure Factors for MMOA Chemicals**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Current and/or Future |
| Medium: | All Media |
| Exposure Medium: | All Media |

| Age (Years) | Exposure Duration (Years) | Body Weight (kg) | Total Surface Area ($cm^2$) | Head ($cm^2$) | Arms ($cm^2$) | Forearms ($cm^2$) | Hands ($cm^2$) | Legs ($cm^2$) | Lower legs ($cm^2$) | Feet ($cm^2$) | Exposed Surface Area ($cm^2$) | Age Group | Soil Ingestion Rate (mg/day) | Age-adjusted Total SA ($cm^2$) | Age-adjusted Exposed SA ($cm^2$) | Adjusted Body Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 6.6 | 3,625 | 663 | 498 | 224 | 190 | 748 | 299 | 235 | 1,610 | 0 to <2 years | 200 | 4,463 | 1,954 | 9.0 |
| 1 | 1 | 11 | 5,300 | 870 | 690 | 311 | 300 | 1,220 | 488 | 330 | 2,299 | | | | | |
| 2 | 1 | 14 | 6,100 | 510 | 880 | 396 | 280 | 1,540 | 616 | 380 | 2,182 | 2 to <6 years | 200 | 7,225 | 2,591 | 17 |
| 3 | 1 | 19 | 7,600 | 610 | 1,060 | 477 | 370 | 1,950 | 780 | 490 | 2,727 | | | | | |
| 4 | 1 | 19 | 7,600 | 610 | 1,060 | 477 | 370 | 1,950 | 780 | 490 | 2,727 | | | | | |
| 5 | 1 | 19 | 7,600 | 610 | 1,060 | 477 | 370 | 1,950 | 780 | 490 | 2,727 | | | | | |
| 6 | 1 | 32 | 10,800 | 660 | 1,510 | 680 | 510 | 3,110 | 1,244 | 730 | 3,824 | 6 to <16 years | 100 | 13,350 | 4,639 | 44 |
| 7 | 1 | 32 | 10,800 | 660 | 1,510 | 680 | 510 | 3,110 | 1,244 | 730 | 3,824 | | | | | |
| 8 | 1 | 32 | 10,800 | 660 | 1,510 | 680 | 510 | 3,110 | 1,244 | 730 | 3,824 | | | | | |
| 9 | 1 | 32 | 10,800 | 660 | 1,510 | 680 | 510 | 3,110 | 1,244 | 730 | 3,824 | | | | | |
| 10 | 1 | 32 | 10,800 | 660 | 1,510 | 680 | 510 | 3,110 | 1,244 | 730 | 3,824 | | | | | |
| 11 | 1 | 57 | 15,900 | 730 | 2,270 | 1,022 | 720 | 4,830 | 1,932 | 1,050 | 5,454 | | | | | |
| 12 | 1 | 57 | 15,900 | 730 | 2,270 | 1,022 | 720 | 4,830 | 1,932 | 1,050 | 5,454 | | | | | |
| 13 | 1 | 57 | 15,900 | 730 | 2,270 | 1,022 | 720 | 4,830 | 1,932 | 1,050 | 5,454 | | | | | |
| 14 | 1 | 57 | 15,900 | 730 | 2,270 | 1,022 | 720 | 4,830 | 1,932 | 1,050 | 5,454 | | | | | |
| 15 | 1 | 57 | 15,900 | 730 | 2,270 | 1,022 | 720 | 4,830 | 1,932 | 1,050 | 5,454 | | | | | |
| 16 | 1 | 72 | 18,400 | 760 | 2,690 | 1,211 | 830 | 5,430 | 2,172 | 1,120 | 6,093 | 16 to <26 years | 100 | 18,850 | 6,709 | 76 |
| 17 | 1 | 72 | 18,400 | 760 | 2,690 | 1,211 | 830 | 5,430 | 2,172 | 1,120 | 6,093 | | | | | |
| 18 | 1 | 72 | 18,400 | 760 | 2,690 | 1,211 | 830 | 5,430 | 2,172 | 1,120 | 6,093 | | | | | |
| 19 | 1 | 72 | 18,400 | 760 | 2,690 | 1,211 | 830 | 5,430 | 2,172 | 1,120 | 6,093 | | | | | |
| 20 | 1 | 72 | 18,400 | 760 | 2,690 | 1,211 | 830 | 5,430 | 2,172 | 1,120 | 6,093 | | | | | |
| 21 | 1 | 80 | 19,300 | 1,250 | 2,755 | 1,240 | 980 | 6,400 | 2,560 | 1,295 | 7,325 | | | | | |
| 22 | 1 | 80 | 19,300 | 1,250 | 2,755 | 1,240 | 980 | 6,400 | 2,560 | 1,295 | 7,325 | | | | | |
| 23 | 1 | 80 | 19,300 | 1,250 | 2,755 | 1,240 | 980 | 6,400 | 2,560 | 1,295 | 7,325 | | | | | |
| 24 | 1 | 80 | 19,300 | 1,250 | 2,755 | 1,240 | 980 | 6,400 | 2,560 | 1,295 | 7,325 | | | | | |
| 25 | 1 | 80 | 19,300 | 1,250 | 2,755 | 1,240 | 980 | 6,400 | 2,560 | 1,295 | 7,325 | | | | | |

Notes:

Exposed Skin Surface Area (SA) = Head + Forearms + Hands + Lower Legs + Feet (US EPA, 2014).

Forearms assumed to represent 45% of the arm and the lower legs assumed to represent 40% of the legs (US EPA, 2004a, 2011a).

Body weights and surface areas (total, heads, arms, hands, legs, feet) from EPA's 2011 Exposure Factors Handbook (US EPA, 2011a, Tables 7-1, 7-2, and 8-1).

**Table 4.6**
**Values Used for Daily Absorbed Dose Calculations**
**Recreational Exposure to Surface Water**

| Exposure Area | Chemical Group | Chemicals of Potential Concern (COPCs) | In EPD? | Chemical-specific Parameters | | | | | | | | | | Recreator, All Age Groups | | Swimmer, Adult | | Swimmer, Adolescent | | Swimmer, Child | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | MW | Kp | B | $D_{sc}$ | $\tau_{event}$ | b | c | t* | FA | $EPC_{sw}$ | $t_{event}$ | DA | $t_{event}$ | DA | $t_{event}$ | DA | $t_{event}$ | DA |
| | | | | g/mole | cm/hr | unitless | $cm^2$/hr | hrs/event | unitless | unitless | hrs | unitless | mg/L | hrs/event | mg/$cm^2$-event | hrs/event | mg/$cm^2$-event | hrs/event | mg/$cm^2$-event | hrs/event | mg/$cm^2$-event |
| SL | METALS | ARSENIC | Yes | 7.5E+01 | 1.0E-03 | 3.3E-03 | 5.9E-07 | 2.8E-01 | 3.1E-01 | 3.4E-01 | 6.7E-01 | 1 | 7.8E-03 | 1 | 7.8E-09 | 2.28 | 1.8E-08 | 2 | 1.6E-08 | 2.74 | 2.1E-08 |
| SL | METALS | CHROMIUM | Yes | 5.2E+01 | 1.0E-03 | 2.8E-03 | 8.0E-07 | 2.1E-01 | 3.0E-01 | 3.4E-01 | 5.0E-01 | 1 | 2.6E-03 | 1 | 2.6E-09 | 2.28 | 5.8E-09 | 2 | 5.1E-09 | 2.74 | 7.0E-09 |
| SL | METALS | COBALT | Yes | 5.9E+01 | 4.0E-04 | 1.2E-03 | 7.3E-07 | 2.3E-01 | 3.0E-01 | 3.3E-01 | 5.5E-01 | 1 | 2.1E-03 | 1 | 8.5E-10 | 2.28 | 1.9E-09 | 2 | 1.7E-09 | 2.74 | 2.3E-09 |
| SL | METALS | CYANIDE | Yes | 2.6E+01 | 1.0E-03 | 2.0E-03 | 1.1E-06 | 1.5E-01 | 3.0E-01 | 3.3E-01 | 3.6E-01 | 1 | 4.4E-03 | 1 | 4.4E-09 | 2.28 | 1.0E-08 | 2 | 8.9E-09 | 2.74 | 1.2E-08 |
| SL | METALS | IRON | Yes | 5.6E+01 | 1.0E-03 | 2.9E-03 | 7.6E-07 | 2.2E-01 | 3.1E-01 | 3.4E-01 | 5.3E-01 | 1 | 1.1E+01 | 1 | 1.1E-05 | 2.28 | 2.6E-05 | 2 | 2.3E-05 | 2.74 | 3.1E-05 |
| SL | METALS | MANGANESE | Yes | 5.5E+01 | 1.0E-03 | 2.9E-03 | 7.7E-07 | 2.2E-01 | 3.1E-01 | 3.4E-01 | 5.2E-01 | 1 | 9.5E-01 | 1 | 9.5E-07 | 2.28 | 2.2E-06 | 2 | 1.9E-06 | 2.74 | 2.6E-06 |
| SL | SVOC | BENZO(A)ANTHRACENE | No | 2.3E+02 | 5.5E-01 | 3.2E+00 | 8.2E-08 | 2.0E+00 | 8.0E+00 | 3.3E+00 | 8.6E+00 | 1 | 6.7E-05 | 1 | 1.5E-07 | 2.28 | 2.2E-07 | 2 | 2.1E-07 | 2.74 | 2.4E-07 |
| SL | SVOC | BENZO(A)PYRENE | No | 2.5E+02 | 7.1E-01 | 4.4E+00 | 6.0E-08 | 2.8E+00 | 1.4E+01 | 4.4E+00 | 1.2E+01 | 1 | 2.0E-04 | 1 | 6.6E-07 | 2.28 | 9.9E-07 | 2 | 9.3E-07 | 2.74 | 1.1E-06 |
| SL | SVOC | BENZO(B)FLUORANTHENE | No | 2.5E+02 | 4.2E-01 | 2.5E+00 | 6.0E-08 | 2.8E+00 | 5.4E+00 | 2.6E+00 | 1.2E+01 | 1 | 1.3E-04 | 1 | 2.6E-07 | 2.28 | 3.9E-07 | 2 | 3.6E-07 | 2.74 | 4.2E-07 |
| SL | SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | No | 3.9E+02 | 1.1E+00 | 8.6E+00 | 1.0E-08 | 1.7E+01 | 5.0E+01 | 8.6E+00 | 7.5E+01 | 0.8 | 1.8E-03 | 1 | 1.8E-05 | 2.28 | 2.7E-05 | 2 | 2.6E-05 | 2.74 | 3.0E-05 |
| SL | SVOC | DIBENZO(A,H)ANTHRACENE | No | 2.8E+02 | 9.5E-01 | 6.1E+00 | 4.3E-08 | 3.9E+00 | 2.6E+01 | 6.2E+00 | 1.7E+01 | 0.6 | 6.8E-05 | 1 | 2.1E-07 | 2.28 | 3.2E-07 | 2 | 3.0E-07 | 2.74 | 3.5E-07 |
| SL | SVOC | INDENO(1,2,3-CD)PYRENE | No | 2.8E+02 | 1.2E+00 | 7.9E+00 | 4.4E-08 | 3.8E+00 | 4.3E+01 | 8.0E+00 | 1.7E+01 | 0.6 | 8.8E-05 | 1 | 3.5E-07 | 2.28 | 5.3E-07 | 2 | 5.0E-07 | 2.74 | 5.8E-07 |
| BWL | METALS | ALUMINUM | Yes | 2.7E+01 | 1.0E-03 | 2.0E-03 | 1.1E-06 | 1.5E-01 | 3.0E-01 | 3.3E-01 | 3.6E-01 | 1 | 1.3E+00 | 1 | 1.3E-06 | 2.28 | 2.9E-06 | 2 | 2.6E-06 | 2.74 | 3.5E-06 |
| BWL | METALS | ANTIMONY | Yes | 1.2E+02 | 1.0E-03 | 4.2E-03 | 3.2E-07 | 5.1E-01 | 3.1E-01 | 3.4E-01 | 1.2E+00 | 1 | 1.2E-03 | 1 | 1.2E-09 | 2.28 | 2.6E-09 | 2 | 2.3E-09 | 2.74 | 3.2E-09 |
| BWL | METALS | ARSENIC | Yes | 7.5E+01 | 1.0E-03 | 3.3E-03 | 5.9E-07 | 2.8E-01 | 3.1E-01 | 3.4E-01 | 6.7E-01 | 1 | 3.1E-02 | 1 | 3.1E-08 | 2.28 | 7.0E-08 | 2 | 6.1E-08 | 2.74 | 8.4E-08 |
| BWL | METALS | CADMIUM | Yes | 1.1E+02 | 1.0E-03 | 4.1E-03 | 3.7E-07 | 4.5E-01 | 3.1E-01 | 3.4E-01 | 1.1E+00 | 1 | 6.2E-04 | 1 | 6.2E-10 | 2.28 | 1.4E-09 | 2 | 1.2E-09 | 2.74 | 1.7E-09 |
| BWL | METALS | CHROMIUM | Yes | 5.2E+01 | 1.0E-03 | 2.8E-03 | 8.0E-07 | 2.1E-01 | 3.0E-01 | 3.4E-01 | 5.0E-01 | 1 | 4.5E-03 | 1 | 4.5E-09 | 2.28 | 1.0E-08 | 2 | 9.0E-09 | 2.74 | 1.2E-08 |
| BWL | METALS | COBALT | Yes | 5.9E+01 | 4.0E-04 | 1.2E-03 | 7.3E-07 | 2.3E-01 | 3.0E-01 | 3.3E-01 | 5.5E-01 | 1 | 1.0E-03 | 1 | 4.0E-10 | 2.28 | 9.2E-10 | 2 | 8.1E-10 | 2.74 | 1.1E-09 |
| BWL | METALS | CYANIDE | Yes | 2.6E+01 | 1.0E-03 | 2.0E-03 | 1.1E-06 | 1.5E-01 | 3.0E-01 | 3.3E-01 | 3.6E-01 | 1 | 2.0E-03 | 1 | 2.0E-09 | 2.28 | 4.6E-09 | 2 | 4.0E-09 | 2.74 | 5.5E-09 |
| BWL | METALS | IRON | Yes | 5.6E+01 | 1.0E-03 | 2.9E-03 | 7.6E-07 | 2.2E-01 | 3.1E-01 | 3.4E-01 | 5.3E-01 | 1 | 6.5E+00 | 1 | 6.5E-06 | 2.28 | 1.5E-05 | 2 | 1.3E-05 | 2.74 | 1.8E-05 |
| BWL | METALS | LEAD | Yes | 2.1E+02 | 1.0E-04 | 5.5E-04 | 1.1E-07 | 1.5E+00 | 3.0E-01 | 3.3E-01 | 3.7E+00 | 1 | 2.6E-02 | 1 | 2.6E-09 | 2.28 | 5.8E-09 | 2 | 5.1E-09 | 2.74 | 7.0E-09 |
| BWL | METALS | MANGANESE | Yes | 5.5E+01 | 1.0E-03 | 2.9E-03 | 7.7E-07 | 2.2E-01 | 3.1E-01 | 3.4E-01 | 5.2E-01 | 1 | 7.0E-02 | 1 | 7.0E-08 | 2.28 | 1.6E-07 | 2 | 1.4E-07 | 2.74 | 1.9E-07 |
| BWL | METALS | THALLIUM | Yes | 2.0E+02 | 1.0E-03 | 5.5E-03 | 1.1E-07 | 1.5E+00 | 3.1E-01 | 3.4E-01 | 3.6E+00 | 1 | 1.2E-03 | 1 | 1.2E-09 | 2.28 | 2.8E-09 | 2 | 2.5E-09 | 2.74 | 3.4E-09 |
| BWL | METALS | VANADIUM | Yes | 5.1E+01 | 1.0E-03 | 2.7E-03 | 8.1E-07 | 2.1E-01 | 3.0E-01 | 3.4E-01 | 4.9E-01 | 1 | 2.5E-03 | 1 | 2.5E-09 | 2.28 | 5.6E-09 | 2 | 4.9E-09 | 2.74 | 6.7E-09 |
| BWL | SVOC | BENZO(A)PYRENE | No | 2.5E+02 | 7.1E-01 | 4.4E+00 | 6.0E-08 | 2.8E+00 | 1.4E+01 | 4.4E+00 | 1.2E+01 | 1 | 3.4E-05 | 1 | 1.1E-07 | 2.28 | 1.7E-07 | 2 | 1.6E-07 | 2.74 | 1.8E-07 |
| HC | METALS | ALUMINUM | Yes | 2.7E+01 | 1.0E-03 | 2.0E-03 | 1.1E-06 | 1.5E-01 | 3.0E-01 | 3.3E-01 | 3.6E-01 | 1 | 6.2E+00 | 1 | 6.2E-06 | NA | | NA | | NA | |
| HC | METALS | ANTIMONY | Yes | 1.2E+02 | 1.0E-03 | 4.2E-03 | 3.2E-07 | 5.1E-01 | 3.1E-01 | 3.4E-01 | 1.2E+00 | 1 | 3.4E-03 | 1 | 3.4E-09 | NA | | NA | | NA | |
| HC | METALS | ARSENIC | Yes | 7.5E+01 | 1.0E-03 | 3.3E-03 | 5.9E-07 | 2.8E-01 | 3.1E-01 | 3.4E-01 | 6.7E-01 | 1 | 1.1E-01 | 1 | 1.1E-07 | NA | | NA | | NA | |
| HC | METALS | BARIUM | Yes | 1.4E+02 | 1.0E-03 | 4.5E-03 | 2.7E-07 | 6.3E-01 | 3.1E-01 | 3.4E-01 | 1.5E+00 | 1 | 4.5E-01 | 1 | 4.5E-07 | NA | | NA | | NA | |
| HC | METALS | CADMIUM | Yes | 1.1E+02 | 1.0E-03 | 4.1E-03 | 3.7E-07 | 4.5E-01 | 3.1E-01 | 3.4E-01 | 1.1E+00 | 1 | 2.5E-03 | 1 | 2.5E-09 | NA | | NA | | NA | |
| HC | METALS | CHROMIUM | Yes | 5.2E+01 | 1.0E-03 | 2.8E-03 | 8.0E-07 | 2.1E-01 | 3.0E-01 | 3.4E-01 | 5.0E-01 | 1 | 1.2E-01 | 1 | 1.2E-07 | NA | | NA | | NA | |
| HC | METALS | COBALT | Yes | 5.9E+01 | 4.0E-04 | 1.2E-03 | 7.3E-07 | 2.3E-01 | 3.0E-01 | 3.3E-01 | 5.5E-01 | 1 | 2.7E-03 | 1 | 1.1E-09 | NA | | NA | | NA | |
| HC | METALS | COPPER | Yes | 6.4E+01 | 1.0E-03 | 3.1E-03 | 6.9E-07 | 2.4E-01 | 3.1E-01 | 3.4E-01 | 5.8E-01 | 1 | 2.8E-02 | 1 | 2.8E-08 | NA | | NA | | NA | |
| HC | METALS | CYANIDE | Yes | 2.6E+01 | 1.0E-03 | 2.0E-03 | 1.1E-06 | 1.5E-01 | 3.0E-01 | 3.3E-01 | 3.6E-01 | 1 | 8.6E-03 | 1 | 8.6E-09 | NA | | NA | | NA | |
| HC | METALS | IRON | Yes | 5.6E+01 | 1.0E-03 | 2.9E-03 | 7.6E-07 | 2.2E-01 | 3.1E-01 | 3.4E-01 | 5.3E-01 | 1 | 1.4E+01 | 1 | 1.4E-05 | NA | | NA | | NA | |
| HC | METALS | LEAD | Yes | 2.1E+02 | 1.0E-04 | 5.5E-04 | 1.1E-07 | 1.5E+00 | 3.0E-01 | 3.3E-01 | 3.7E+00 | 1 | 2.4E-01 | 1 | 2.4E-08 | NA | | NA | | NA | |
| HC | METALS | MANGANESE | Yes | 5.5E+01 | 1.0E-03 | 2.9E-03 | 7.7E-07 | 2.2E-01 | 3.1E-01 | 3.4E-01 | 5.2E-01 | 1 | 1.6E-01 | 1 | 1.6E-07 | NA | | NA | | NA | |
| HC | METALS | MERCURY | Yes | 2.7E+02 | 1.0E-03 | 6.3E-03 | 4.7E-08 | 3.6E+00 | 3.1E-01 | 3.4E-01 | 8.5E+00 | 1 | 2.0E-04 | 1 | 2.0E-10 | NA | | NA | | NA | |
| HC | METALS | THALLIUM | Yes | 2.0E+02 | 1.0E-03 | 5.5E-03 | 1.1E-07 | 1.5E+00 | 3.1E-01 | 3.4E-01 | 3.6E+00 | 1 | 5.4E-03 | 1 | 5.4E-09 | NA | | NA | | NA | |
| HC | METALS | VANADIUM | Yes | 5.1E+01 | 1.0E-03 | 2.7E-03 | 8.1E-07 | 2.1E-01 | 3.0E-01 | 3.4E-01 | 4.9E-01 | 1 | 5.1E-03 | 1 | 5.1E-09 | NA | | NA | | NA | |
| HC | METALS | ZINC | Yes | 6.5E+01 | 6.0E-04 | 1.9E-03 | 6.7E-07 | 2.5E-01 | 3.0E-01 | 3.3E-01 | 5.9E-01 | 1 | 4.8E-01 | 1 | 2.9E-07 | NA | | NA | | NA | |
| KWL | METALS | ALUMINUM | Yes | 2.7E+01 | 1.0E-03 | 2.0E-03 | 1.1E-06 | 1.5E-01 | 3.0E-01 | 3.3E-01 | 3.6E-01 | 1 | 1.4E+00 | 1 | 1.4E-06 | 2.28 | 3.1E-06 | 2 | 2.7E-06 | 2.74 | 3.8E-06 |
| KWL | METALS | ANTIMONY | Yes | 1.2E+02 | 1.0E-03 | 4.2E-03 | 3.2E-07 | 5.1E-01 | 3.1E-01 | 3.4E-01 | 1.2E+00 | 1 | 3.7E-03 | 1 | 3.7E-09 | 2.28 | 8.4E-09 | 2 | 7.4E-09 | 2.74 | 1.0E-08 |
| KWL | METALS | ARSENIC | Yes | 7.5E+01 | 1.0E-03 | 3.3E-03 | 5.9E-07 | 2.8E-01 | 3.1E-01 | 3.4E-01 | 6.7E-01 | 1 | 1.7E-02 | 1 | 1.7E-08 | 2.28 | 3.8E-08 | 2 | 3.3E-08 | 2.74 | 4.6E-08 |
| KWL | METALS | CHROMIUM | Yes | 5.2E+01 | 1.0E-03 | 2.8E-03 | 8.0E-07 | 2.1E-01 | 3.0E-01 | 3.4E-01 | 5.0E-01 | 1 | 5.3E-03 | 1 | 5.3E-09 | 2.28 | 1.2E-08 | 2 | 1.1E-08 | 2.74 | 1.5E-08 |
| KWL | METALS | COBALT | Yes | 5.9E+01 | 4.0E-04 | 1.2E-03 | 7.3E-07 | 2.3E-01 | 3.0E-01 | 3.3E-01 | 5.5E-01 | 1 | 1.6E-03 | 1 | 6.4E-10 | 2.28 | 1.5E-09 | 2 | 1.3E-09 | 2.74 | 1.8E-09 |
| KWL | METALS | CYANIDE | Yes | 2.6E+01 | 1.0E-03 | 2.0E-03 | 1.1E-06 | 1.5E-01 | 3.0E-01 | 3.3E-01 | 3.6E-01 | 1 | 1.8E-03 | 1 | 1.8E-09 | 2.28 | 4.1E-09 | 2 | 3.6E-09 | 2.74 | 4.9E-09 |
| KWL | METALS | IRON | Yes | 5.6E+01 | 1.0E-03 | 2.9E-03 | 7.6E-07 | 2.2E-01 | 3.1E-01 | 3.4E-01 | 5.3E-01 | 1 | 3.6E+00 | 1 | 3.6E-06 | 2.28 | 8.2E-06 | 2 | 7.2E-06 | 2.74 | 9.8E-06 |
| KWL | METALS | LEAD | Yes | 2.1E+02 | 1.0E-04 | 5.5E-04 | 1.1E-07 | 1.5E+00 | 3.0E-01 | 3.3E-01 | 3.7E+00 | 1 | 2.9E-02 | 1 | 2.9E-09 | 2.28 | 6.7E-09 | 2 | 5.9E-09 | 2.74 | 8.1E-09 |
| KWL | METALS | MANGANESE | Yes | 5.5E+01 | 1.0E-03 | 2.9E-03 | 7.7E-07 | 2.2E-01 | 3.1E-01 | 3.4E-01 | 5.2E-01 | 1 | 8.0E-02 | 1 | 8.0E-08 | 2.28 | 1.8E-07 | 2 | 1.6E-07 | 2.74 | 2.2E-07 |
| KWL | METALS | THALLIUM | Yes | 2.0E+02 | 1.0E-03 | 5.5E-03 | 1.1E-07 | 1.5E+00 | 3.1E-01 | 3.4E-01 | 3.6E+00 | 1 | 5.8E-03 | 1 | 5.8E-09 | 2.28 | 1.3E-08 | 2 | 1.2E-08 | 2.74 | 1.6E-08 |

Notes:

EPD – Effective Predictive Domain.

NA – Not Applicable (receptor is not evaluated in the exposure area).

Only COPCs identified in surface water are presented.

Equations are provided in Part E, Supplemental Guidance for Dermal Risk Assessment of the Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (US EPA, 2004a).

Chemical-specific parameters are as follows:

MW Molecular weight (g/mole).

$K_p$ Stratum corneum (sc) permeability constant (cm/hr).

B — Ratio of permeability of chemical in stratum corneum to permeability in viable epidermis (unitless).

$$B = K_p \frac{\sqrt{MW}}{2.6}$$

$D_{sc}$ — Effective diffusivity for chemical transfer through the skin ($cm^2$/hr).

$$D_{sc} = 10^{(-2.8-0.0056MW)} \times l_{sc}$$

$\tau_{event}$ — Lag time per event (hr/event).

$$\tau_{event} = \frac{l_{sc}^2}{6D_{sc}}$$

b & c — Parameters used to calculate time to reach steady state (unitless).

$$b = \frac{2(1+B)^2}{\pi} - c \qquad\qquad c = \frac{1+3B+3B^2}{3(1+B)}$$

t* — Time to reach steady state (hr).

If $B \leq 0.6$, then: $t^* = 2.4\tau_{event}$

If $B > 0.6$, then: $t^* = 6\tau_{event}(b - \sqrt{b^2 - c^2})$

FA — Fraction absorbed (unitless).

$DA_{event}$ — Absorbed dose (mg/$cm^2$-event).

For inorganics: $DA_{event} = K_p \times C_w \times t_{event} \times CF$

For organics, if $t_{event} \leq t^*$, then: $DA_{event} = 2\,FA \times K_p \times C_w \sqrt{\frac{6\,\tau_{event} \times t_{event}}{\pi}} \times CF$

For organics, if $t_{event} > t^*$, then: $DA_{event} = FA \times K_p \times C_w \times \left[\frac{t_{event}}{1+B} + 2\tau_{event}\left(\frac{1+3B+3B^2}{(1+B)^2}\right)\right] \times CF$

$l_{sc}$ — Apparent thickness of stratum corneum (0.001 cm).

$C_w$ — Water concentration, *i.e.* , surface water exposure point concentration (mg/L).

CF — Conversion factor (0.001 L/$cm^3$).

**Table 5.1**
**Non-cancer Toxicity Data - Oral/Dermal**

| Chemical of Potential Concern | Chronic/ Subchronic | Oral RfD | | Oral Absorption Efficiency for Dermal (1) | Oral Bioavailability (B) (unitless) | Dermal Absorption Fraction - Soil (ABS) (unitless) (2) | Absorbed RfD for Dermal | | Primary Target Organ(s) | Combined Uncertainty/ Modifying Factors | RfD: Target Organ(s) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Value | Units | | | | Value | Units | | | Source(s) (3) | Date(s) |
| ALUMINUM | Chronic | 1.0E+00 | mg/kg-day | 1 | 1 | NA | 1.0E+00 | mg/kg-day | Nervous system | 100 | PPRTV | NA |
| ANTIMONY | Chronic | 4.0E-04 | mg/kg-day | 0.15 | 1 | NA | 6.0E-05 | mg/kg-day | Hematological | 1000 | IRIS | 2/1/1991 |
| ARSENIC | Chronic | 3.0E-04 | mg/kg-day | 1 | 0.6 | 0.03 | 3.0E-04 | mg/kg-day | Skin | 3 | IRIS | 9/1/1991 |
| BARIUM | Chronic | 2.0E-01 | mg/kg-day | 0.07 | 1 | NA | 1.4E-02 | mg/kg-day | Renal | 300 | IRIS | 7/11/2005 |
| CADMIUM (S) | Chronic | 1.0E-03 | mg/kg-day | 0.025 | 1 | 0.001 | 2.5E-05 | mg/kg-day | Renal | 10 | IRIS (Cadmium in soil) | 2/1/1994 |
| CADMIUM (W) | Chronic | 5.0E-04 | mg/kg-day | 0.05 | 1 | 0.001 | 2.5E-05 | mg/kg-day | Renal | 10 | IRIS (Cadmium in water) | 2/1/1994 |
| CHROMIUM | Chronic | 3.0E-03 | mg/kg-day | 0.025 | 1 | NA | 7.5E-05 | mg/kg-day | None Observed | 1000 | IRIS (4) | 9/3/1998 |
| COBALT | Chronic | 3.0E-04 | mg/kg-day | 1 | 1 | NA | 3.0E-04 | mg/kg-day | Endocrine | 3000 | PPRTV | NA |
| COPPER | Chronic | 4.0E-02 | mg/kg-day | 1 | 1 | NA | 4.0E-02 | mg/kg-day | Gastrointestinal | NA | HEAST | NA |
| CYANIDE | Chronic | 6.0E-04 | mg/kg-day | 1 | 1 | NA | 6.0E-04 | mg/kg-day | Reproductive | 3000 | IRIS | 9/28/2010 |
| IRON | Chronic | 7.0E-01 | mg/kg-day | 1 | 1 | NA | 7.0E-01 | mg/kg-day | Gastrointestinal | 1.5 | PPRTV | NA |
| LEAD | Chronic | NA | NA | 1 | 1 | NA | NA | NA | NA | NA | See Note (5) | NA |
| MANGANESE | Chronic | 2.4E-02 | mg/kg-day | 0.04 | 1 | NA | 9.6E-04 | mg/kg-day | Nervous system | 1 | US EPA RSL (6) | 5/1/1996 |
| MERCURY | Chronic | 3.0E-04 | mg/kg-day | 0.07 | 1 | NA | 2.1E-05 | mg/kg-day | Immunological | 1000 | IRIS (mercuric chloride) | 5/1/1995 |
| NICKEL | Chronic | 2.0E-02 | mg/kg-day | 0.04 | 1 | NA | 8.0E-04 | mg/kg-day | Systemic | 300 | IRIS | 12/1/1991 |
| THALLIUM | Chronic | 1.0E-05 | mg/kg-day | 1 | 1 | NA | 1.0E-05 | mg/kg-day | Skin | 3000 | PPRTV (Appendix) | NA |
| VANADIUM | Chronic | 5.0E-03 | mg/kg-day | 0.026 | 1 | NA | 1.3E-04 | mg/kg-day | Systemic | 100 | IRIS | 12/1/1996 |
| ZINC | Chronic | 3.0E-01 | mg/kg-day | 1 | 1 | NA | 3.0E-01 | mg/kg-day | Hematological | 3 | IRIS | 8/3/2005 |
| 4,4'-DDD | Chronic | 3.0E-05 | mg/kg-day | 1 | 1 | 0.1 | 3.0E-05 | mg/kg-day | Hematological | 300 | PPRTV (Appendix) | 9/26/2017 |
| 4,4'-DDE | Chronic | 3.0E-04 | mg/kg-day | 1 | 1 | NA | 3.0E-04 | mg/kg-day | Hematological | 3000 | PPRTV (Appendix) | 9/26/2017 |
| AROCLOR-1254 | Chronic | 2.0E-05 | mg/kg-day | 1 | 1 | 0.14 | 2.0E-05 | mg/kg-day | Immunological | 300 | IRIS | 11/1/1996 |
| AROCLOR-1260 | Chronic | 2.0E-05 | mg/kg-day | 1 | 1 | 0.14 | 2.0E-05 | mg/kg-day | Immunological | 300 | IRIS (7) | 11/1/1996 |
| BENZO(A)ANTHRACENE | Chronic | NA | NA | 1 | 1 | 0.13 | NA | NA | NA | NA | NA | NA |
| BENZO(A)PYRENE | Chronic | 3.0E-04 | mg/kg-day | 1 | 1 | 0.13 | 3.0E-04 | mg/kg-day | Developmental | 300 | IRIS | 1/19/2017 |
| BENZO(B)FLUORANTHENE | Chronic | NA | NA | 1 | 1 | 0.13 | NA | NA | NA | NA | NA | NA |
| BENZO(K)FLUORANTHENE | Chronic | NA | NA | 1 | 1 | 0.13 | NA | NA | NA | NA | NA | NA |
| BENZO[J]FLUORANTHENE | Chronic | NA | NA | 1 | 1 | 0.13 | NA | NA | NA | NA | NA | NA |
| BIS(2-ETHYLHEXYL) PHTHALATE | Chronic | 2.0E-02 | mg/kg-day | 1 | 1 | 0.1 | 2.0E-02 | mg/kg-day | Hepatic | 1000 | IRIS | 5/1/1991 |
| CHRYSENE | Chronic | NA | NA | 1 | 1 | 0.13 | NA | NA | NA | NA | NA | NA |
| DIBENZO(A,H)ANTHRACENE | Chronic | NA | NA | 1 | 1 | 0.13 | NA | NA | NA | NA | NA | NA |
| INDENO(1,2,3-CD)PYRENE | Chronic | NA | NA | 1 | 1 | 0.13 | NA | NA | NA | NA | NA | NA |
| NAPHTHALENE | Chronic | 2.0E-02 | mg/kg-day | 1 | 1 | 0.13 | 2.0E-02 | mg/kg-day | Systemic | 3000 | IRIS | 9/17/1998 |
| TRICHLOROETHYLENE (TCE) | Chronic | 5.0E-04 | mg/kg-day | 1 | 1 | NA | 5.0E-04 | mg/kg-day | Developmental | See note (8) | IRIS | 9/28/2011 |

Notes:

(1) The oral absorption efficiency is from EPA (2004a, Exhibit 4-1) or EPA RSLs (US EPA, 2017e).

(2) Literature sources of dermal absorption fractions for soil are discussed in Section 7 of the report text.

(3) EPA (2017e) cites the following sources for toxicity values (cancer slope factor, reference dose, unit risk, and reference concentration):

EPA Integrated Risk Information System (IRIS)
Health Effects Assessment Summary Tables (HEAST)
Agency for Toxic Substances and Disease Registry (ATSDR)
Provisional Peer-reviewed Toxicity Values (PPRTVs)

(4) The RfD for hexavalent chromium was applied for "chromium."

(5) Lead does not have toxicity factors; lead risk will be evaluated with a blood lead model.

(6) RfD for manganese based on non-diet is recommended in the US EPA RSL User Guide, which subtracts the manganese contribution from the diet and uses a modifying factor of 3 (US EPA, 2017g).

(7) The RfD for Aroclor 1254 was used for other highly chlorinated Aroclors, including Aroclor 1260.

(8) Multiple uncertainty factors were considered in the derivation of this RfD.

**Table 5.2**
**Non-cancer Toxicity Data - Inhalation**

| Chemical of Potential Concern | Chronic/ Subchronic | Inhalation Reference Concentration (RfC) | | Primary Target Organ(s) | Combined Uncertainty/ Modifying Factors | RfC: Target Organ(s) | |
|---|---|---|---|---|---|---|---|
| | | | | | | Source(s) (1) | Date(s) |
| ALUMINUM | Chronic | 5.0E-03 | mg/m3 | Nervous system | 300 | PPRTV | 10/23/2006 |
| ANTIMONY | Chronic | NA | NA | NA | NA | NA | NA |
| ARSENIC | Chronic | 1.5E-05 | mg/m3 | Respiratory | 30 | Cal EPA | 7/1/2014 |
| BARIUM | Chronic | 5.0E-04 | mg/m3 | Reproductive | 1000 | HEAST | 7/1/1997 |
| CADMIUM (S) | Chronic | 1.0E-05 | mg/m3 | Renal | 10 | ATSDR | 9/1/2012 |
| CADMIUM (W) | Chronic | 1.0E-05 | mg/m3 | Renal | 10 | ATSDR | 9/1/2012 |
| CHROMIUM | Chronic | 1.0E-04 | mg/m3 | Respiratory | 300 | IRIS (2) | 9/3/1998 |
| COBALT | Chronic | 6.0E-06 | mg/m3 | Endocrine | 300 | PPRTV | 8/25/2008 |
| COPPER | Chronic | NA | NA | NA | NA | NA | NA |
| CYANIDE | Chronic | 8.0E-04 | mg/m3 | Endocrine | 3000 | IRIS (Hydrogen Cyanide & Cyanide Salts) | 9/28/2010 |
| IRON | Chronic | NA | NA | NA | NA | NA | NA |
| LEAD | Chronic | NA | NA | NA | NA | NA | NA |
| MANGANESE | Chronic | 5.0E-05 | mg/m3 | Nervous system | 1000 | IRIS | 12/1/1993 |
| MERCURY | Chronic | 3.0E-04 | mg/m3 | Nervous system | 30 | IRIS (Mercury, elemental) | 6/1/1995 |
| NICKEL | Chronic | 9.0E-05 | mg/m3 | Respiratory | 10 | ATSDR | 8/1/2005 |
| THALLIUM | Chronic | NA | NA | NA | NA | NA | NA |
| VANADIUM | Chronic | 1.0E-04 | mg/m3 | Respiratory | 30 | ATSDR | 9/1/2012 |
| ZINC | Chronic | NA | NA | NA | NA | NA | NA |
| 4,4'-DDD | Chronic | NA | NA | NA | NA | NA | NA |
| 4,4'-DDE | Chronic | NA | NA | NA | NA | NA | NA |
| AROCLOR-1254 | Chronic | NA | NA | NA | NA | NA | NA |
| AROCLOR-1260 | Chronic | NA | NA | NA | NA | NA | NA |
| BENZO(A)ANTHRACENE | Chronic | NA | NA | NA | NA | NA | NA |
| BENZO(A)PYRENE | Chronic | 2.0E-06 | mg/m3 | Developmental | 3000 | IRIS | 1/19/2017 |
| BENZO(B)FLUORANTHENE | Chronic | NA | NA | NA | NA | NA | NA |
| BENZO(K)FLUORANTHENE | Chronic | NA | NA | NA | NA | NA | NA |
| BENZO[J]FLUORANTHENE | Chronic | NA | NA | NA | NA | NA | NA |
| BIS(2-ETHYLHEXYL) PHTHALATE | Chronic | NA | NA | NA | NA | NA | NA |
| CHRYSENE | Chronic | NA | NA | NA | NA | NA | NA |
| DIBENZO(A,H)ANTHRACENE | Chronic | NA | NA | NA | NA | NA | NA |
| INDENO(1,2,3-CD)PYRENE | Chronic | NA | NA | NA | NA | NA | NA |
| NAPHTHALENE | Chronic | 3.0E-03 | mg/m3 | Respiratory | 3000 | IRIS | 9/17/1998 |
| TRICHLOROETHYLENE (TCE) | Chronic | 2.0E-03 | mg/m3 | Developmental | See Note (3) | IRIS | 9/28/2011 |

Notes:

NA – Not Available.

(1) EPA (2017e) cites the following sources for toxicity values (cancer slope factor, reference dose, unit risk, and reference concentration):

EPA Integrated Risk Information System (IRIS)
California EPA (CalEPA)
Health Effects Assessment Summary Tables (HEAST)
Agency for Toxic Substances and Disease Registry (ATSDR)
Provisional Peer-reviewed Toxicity Values (PPRTVs)

(2) The RfC for hexavalent chromium was applied for "chromium."

(3) Multiple uncertainty factors were considered in the derivation of this RfD.

**Table 6.1**
**Cancer Toxicity Data - Oral/Dermal**

| Chemical of Potential Concern | Oral Cancer Slope Factor | | Oral Absorption Efficiency for Dermal (1) | Absorbed Cancer Slope Factor for Dermal | | Weight of Evidence/ Cancer Guideline Description | Oral CSF | | Mutagen (3) |
|---|---|---|---|---|---|---|---|---|---|
| | Value | Units | | Value | Units | | Source(s) (2) | Date(s) | |
| ALUMINUM | NA | NA | 1 | NA | NA | D | IRIS | 2/1/1995 | No |
| ANTIMONY | NA | NA | 0.15 | NA | NA | NA | NA | NA | No |
| ARSENIC | 1.5E+00 | (mg/kg-day)-1 | 1 | 1.5E+00 | (mg/kg-day)-1 | A | IRIS | 4/10/1998 | No |
| BARIUM | NA | NA | 0.07 | NA | NA | D | IRIS | 3/30/1998 | No |
| CADMIUM (S) | NA | NA | 0.025 | NA | NA | B1 | IRIS (Cadmium in soil) | 6/1/1992 | No |
| CADMIUM (W) | NA | NA | 0.05 | NA | NA | B1 | IRIS (Cadmium in water) | 6/1/1992 | No |
| CHROMIUM | 5.0E-01 | (mg/kg-day)-1 | 0.025 | 2.0E+01 | (mg/kg-day)-1 | NA | Cal EPA (4) | 7/1/2011 | Yes |
| COBALT | NA | NA | 1 | NA | NA | NA | NA | NA | No |
| COPPER | NA | NA | 1 | NA | NA | D | IRIS | 8/1/1991 | No |
| CYANIDE | NA | NA | 1 | NA | NA | Data inadequate | IRIS | 9/28/2010 | No |
| IRON | NA | NA | 1 | NA | NA | NA | NA | NA | No |
| LEAD | NA | NA | 1 | NA | NA | B2 | IRIS | 11/1/1993 | No |
| MANGANESE | NA | NA | 0.04 | NA | NA | D | IRIS | 12/1/1996 | No |
| MERCURY | NA | NA | 0.07 | NA | NA | C | IRIS (mercuric chloride) | 5/1/1995 | No |
| NICKEL | NA | NA | 0.04 | NA | NA | NA | NA | NA | No |
| THALLIUM | NA | NA | 1 | NA | NA | D | IRIS (thallium soluble salts) | 9/30/2009 | No |
| VANADIUM | NA | NA | 0.026 | NA | NA | NA | NA | NA | No |
| ZINC | NA | NA | 1 | NA | NA | Data inadequate | IRIS | 8/3/2005 | No |
| 4,4'-DDD | 2.4E-01 | (mg/kg-day)-1 | 1 | 2.4E-01 | (mg/kg-day)-1 | B2 | IRIS | 8/22/1988 | No |
| 4,4'-DDE | 3.4E-01 | (mg/kg-day)-1 | 1 | 3.4E-01 | (mg/kg-day)-1 | B2 | IRIS | 8/22/1988 | No |
| AROCLOR-1254 | 2.0E+00 | (mg/kg-day)-1 | 1 | 2.0E+00 | (mg/kg-day)-1 | B2 | IRIS (PCBs); High risk and persistence; Upper-bound | 6/1/1997 | No |
| AROCLOR-1260 | 2.0E+00 | (mg/kg-day)-1 | 1 | 2.0E+00 | (mg/kg-day)-1 | B2 | IRIS (PCBs); High risk and persistence; Upper-bound | 6/1/1997 | No |
| BENZO(A)ANTHRACENE | 1.0E-01 | (mg/kg-day)-1 | 1 | 1.0E-01 | (mg/kg-day)-1 | B2 | IRIS (benzo(a)pyrene) (5) | 1/19/2017 | Yes |
| BENZO(A)PYRENE | 1.0E+00 | (mg/kg-day)-1 | 1 | 1.0E+00 | (mg/kg-day)-1 | A | IRIS | 1/19/2017 | Yes |
| BENZO(B)FLUORANTHENE | 1.0E-01 | (mg/kg-day)-1 | 1 | 1.0E-01 | (mg/kg-day)-1 | B2 | IRIS (benzo(a)pyrene) (5) | 1/19/2017 | Yes |
| BENZO(K)FLUORANTHENE | 1.0E-02 | (mg/kg-day)-1 | 1 | 1.0E-02 | (mg/kg-day)-1 | B2 | IRIS (benzo(a)pyrene) (5) | 1/19/2017 | Yes |
| BENZO[J]FLUORANTHENE | 1.2E+00 | (mg/kg-day)-1 | 1 | 1.2E+00 | (mg/kg-day)-1 | B2 | Cal EPA | 5/1/2009 | No |
| BIS(2-ETHYLHEXYL) PHTHALATE | 1.4E-02 | (mg/kg-day)-1 | 1 | 1.4E-02 | (mg/kg-day)-1 | B2 | IRIS | 2/1/1993 | No |
| CHRYSENE | 1.0E-03 | (mg/kg-day)-1 | 1 | 1.0E-03 | (mg/kg-day)-1 | B2 | IRIS (benzo(a)pyrene) (5) | 1/19/2017 | Yes |
| DIBENZO(A,H)ANTHRACENE | 1.0E+00 | (mg/kg-day)-1 | 1 | 1.0E+00 | (mg/kg-day)-1 | B2 | IRIS (benzo(a)pyrene) (5) | 1/19/2017 | Yes |
| INDENO(1,2,3-CD)PYRENE | 1.0E-01 | (mg/kg-day)-1 | 1 | 1.0E-01 | (mg/kg-day)-1 | B2 | IRIS (benzo(a)pyrene) (5) | 1/19/2017 | Yes |
| NAPHTHALENE | NA | NA | 1 | NA | NA | NA | NA | NA | No |
| TRICHLOROETHYLENE (TCE) | 4.6E-02 | (mg/kg-day)-1 | 1 | 4.6E-02 | (mg/kg-day)-1 | A | IRIS (6) | 9/28/2011 | Yes |

Notes:

Data inadequate = Data are inadequate to assess carcinogenic potential.

(1) The oral absorption efficiency was obtained from US EPA (2004a, Exhibit 4-1) or US EPA RSLs (US EPA, 2017e).

(2) EPA (2017e) cites the following sources for toxicity values (cancer slope factor, reference dose, unit risk, and reference concentration):

EPA Integrated Risk Information System (IRIS) California Environmental Protection Agency (CalEPA)

(3) Mutagen – Compound is flagged with an M if it has a mutagenic mode of action. Information was obtained from the US EPA RSL table (US EPA, 2017e).

(4) The CSF for hexavalent chromium was applied for "chromium."

(5) The CSFs for these PAH compounds are based on benzo(a)pyrene and a toxicity equivalency factor, as listed in IRIS (US EPA, 2017g).

(6) The CSF for trichloroethylene is based on specific CSFs for kidney cancer (9.3E-3), liver cancer (1.6E-2), and non-Hodgkin's lymphoma (2.2E-2) (US EPA, 2011c).

**Table 6.2**

**Cancer Toxicity Data - Inhalation**

| Chemical of Potential Concern | Inhalation Unit Risk (UR) | | Weight of Evidence/ Cancer Guideline Description | Unit Risk | | Mutagen (2) |
|---|---|---|---|---|---|---|
| | | | | Source(s) (1) | Date(s) | |
| ALUMINUM | NA | NA | NA | NA | NA | No |
| ANTIMONY | NA | NA | NA | NA | NA | No |
| ARSENIC | 4.3E-03 | (µg/m3)-1 | A | IRIS | 4/10/1998 | No |
| BARIUM | NA | NA | NA | NA | NA | No |
| CADMIUM (S) | 1.8E-03 | (µg/m3)-1 | B1 | IRIS | 6/1/1992 | No |
| CADMIUM (W) | 1.8E-03 | (µg/m3)-1 | B2 | IRIS | 6/2/1992 | No |
| CHROMIUM | 8.4E-02 | (µg/m3)-1 | A | IRIS (3) | 9/3/1998 | Yes |
| COBALT | 9.0E-03 | (µg/m3)-1 | B2 | PPRTV | 8/25/2008 | No |
| COPPER | NA | NA | NA | NA | NA | No |
| CYANIDE | NA | NA | NA | NA | NA | No |
| IRON | NA | NA | NA | NA | NA | No |
| LEAD | NA | NA | NA | NA | NA | No |
| MANGANESE | NA | NA | NA | NA | NA | No |
| MERCURY | NA | NA | NA | NA | NA | No |
| NICKEL | 2.6E-04 | (µg/m3)-1 | B2 | Cal EPA | 6/1/2009 | No |
| THALLIUM | NA | NA | NA | NA | NA | No |
| VANADIUM | NA | NA | NA | NA | NA | No |
| ZINC | NA | NA | NA | NA | NA | No |
| 4,4'-DDD | 6.9E-05 | (µg/m3)-1 | B2 | Cal EPA | 1/1/2014 | No |
| 4,4'-DDE | 9.7E-05 | (µg/m3)-1 | B2 | Cal EPA | 1/1/2014 | No |
| AROCLOR-1254 | 5.7E-04 | (µg/m3)-1 | B2 | IRIS (PCBs); High risk and persistence; Upper-bound | 6/1/1997 | No |
| AROCLOR-1260 | 5.7E-04 | (µg/m3)-1 | B2 | IRIS (PCBs); High risk and persistence; Upper-bound | 6/1/1997 | No |
| BENZO(A)ANTHRACENE | 6.0E-05 | (µg/m3)-1 | B2 | IRIS (benzo(a)pyrene) (4) | 1/19/2017 | Yes |
| BENZO(A)PYRENE | 6.0E-04 | (µg/m3)-1 | A | IRIS | 1/19/2017 | Yes |
| BENZO(B)FLUORANTHENE | 6.0E-05 | (µg/m3)-1 | B2 | IRIS (benzo(a)pyrene) (4) | 1/19/2017 | Yes |
| BENZO(K)FLUORANTHENE | 6.0E-06 | (µg/m3)-1 | B2 | IRIS (benzo(a)pyrene) (4) | 1/19/2017 | Yes |
| BENZO[J]FLUORANTHENE | 1.1E-04 | (µg/m3)-1 | B2 | Cal EPA | 5/1/2009 | No |
| BIS(2-ETHYLHEXYL) PHTHALATE | 2.4E-06 | (µg/m3)-1 | B2 | Cal EPA | 7/1/1993 | No |
| CHRYSENE | 6.0E-07 | (µg/m3)-1 | B2 | IRIS (benzo(a)pyrene) (4) | 1/19/2017 | Yes |
| DIBENZO(A,H)ANTHRACENE | 6.0E-04 | (µg/m3)-1 | B2 | IRIS (benzo(a)pyrene) (4) | 1/19/2017 | Yes |
| INDENO(1,2,3-CD)PYRENE | 6.0E-05 | (µg/m3)-1 | B2 | IRIS (benzo(a)pyrene) (4) | 1/19/2017 | Yes |
| NAPHTHALENE | 3.4E-05 | (µg/m3)-1 | B2 | Cal EPA | 1/20/2011 | No |
| TRICHLOROETHYLENE (TCE) | 4.1E-06 | (µg/m3)-1 | A | IRIS (5) | 9/28/2011 | Yes |

Notes:

NA – Not Available.

Toxicity factors, absorption factors (dermal and GI), and mutagen identification from US EPA (2017e).

(1) EPA (2017e) cites the following sources for toxicity values (cancer slope factor, reference dose, unit risk, and reference concentration):

EPA Integrated Risk Information System (IRIS) Provisional Peer-reviewed Toxicity Values (PPRTVs)

California Environmental Protection Agency (CalEPA)

(2) Mutagen – Compounds with mutagenic modes of action are flagged in this column. Information is obtained from the EPA RSL table (US EPA, 2017e).

(3) The IUR for hexavalent chromium was applied for "chromium."

(4) The IURs for these PAH compounds are based on benzo(a)pyrene and a toxicity equivalency factor, as listed in IRIS (US EPA, 2017g).

(5) The IUR for trichloroethylene is based on specific IURs for kidney cancer (1E-6), liver cancer (1E-6), and non-Hodgkin's lymphoma (2E-6) (US EPA, 2011c).

**Table 7.1**
**Calculation of Chemical Cancer Risks for Recreator**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.0E+03 | mg/kg | 1.7E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 2.3E+00 | mg/kg | 1.3E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 9.8E+00 | mg/kg | 3.3E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 5.0E-07 |
| | | | Ingestion | CHROMIUM | 8.0E-01 | mg/kg | 4.5E-08 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 2.2E-08 |
| | | | Ingestion | COBALT | 6.2E+00 | mg/kg | 3.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.0E+02 | mg/kg | 5.7E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 2.7E+00 | mg/kg | 1.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 8.0E+03 | mg/kg | 4.5E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.7E+02 | mg/kg | 9.5E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 6.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 8.6E-01 | mg/kg | 4.8E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 6.5E-02 | mg/kg | 3.6E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 7.3E-09 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 1.1E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.1E-07 |
| | | | Ingestion | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 8.2E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 8.2E-07 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 1.7E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.7E-07 |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 3.5E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 3.5E-09 |
| | | | Ingestion | CHRYSENE | 3.0E+01 | mg/kg | 1.7E-06 | mg/kg-d | 1.0E-03 | (mg/kg-d)-1 | 1.7E-09 |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 8.4E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 8.4E-08 |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 2.3E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.3E-08 |
| | | | Ingestion | **TICs** | | | | | | | |
| | | | Ingestion | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 6.7E-07 | mg/kg-d | 1.2E+00 | (mg/kg-d)-1 | 8.1E-07 |
| | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | | **2.5E-06** |
| Sediment | Sediment | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 2.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 9.8E+00 | mg/kg | 2.0E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 3.0E-07 |
| | | | Dermal | CHROMIUM | 8.0E-01 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 6.2E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.0E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 2.7E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 8.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.7E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 8.6E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 6.5E-02 | mg/kg | 6.1E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.2E-08 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 1.7E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.7E-07 |
| | | | Dermal | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 1.3E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.3E-06 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 2.6E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.6E-07 |
| | | | Dermal | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 5.5E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 5.5E-09 |
| | | | Dermal | CHRYSENE | 3.0E+01 | mg/kg | 2.6E-06 | mg/kg-d | 1.0E-03 | (mg/kg-d)-1 | 2.6E-09 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 1.3E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.3E-07 |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 3.6E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.6E-08 |
| | | | Dermal | **TICs** | | | | | | | |
| | | | Dermal | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 1.1E-06 | mg/kg-d | 1.2E+00 | (mg/kg-d)-1 | 1.3E-06 |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **3.5E-06** |
| Surface Water | Surface Water | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ARSENIC | 7.8E-03 | mg/L | 2.6E-08 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 4.0E-08 |
| | | | Dermal | CHROMIUM | 2.6E-03 | mg/L | 8.6E-09 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 1.7E-07 |
| | | | Dermal | COBALT | 2.1E-03 | mg/L | 2.9E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.4E-03 | mg/L | 1.5E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 1.1E+01 | mg/L | 3.8E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 9.5E-01 | mg/L | 3.2E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 4.9E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.9E-08 |
| | | | Dermal | BENZO(A)PYRENE | 2.0E-04 | mg/L | 2.2E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.2E-06 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 8.6E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 8.6E-08 |
| | | | Dermal | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 6.1E-05 | mg/kg-d | 1.4E-02 | (mg/kg-d)-1 | 8.6E-07 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 7.2E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 7.2E-07 |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 1.2E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.2E-07 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **4E-06** |
| **Exposure Point Total (SL)** | | | | | | | | | | | **1E-05** |
| Soil | Soil (0-2 ft bgs) | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.8E+03 | mg/kg | 7.3E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 1.4E+00 | mg/kg | 2.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 1.1E+02 | mg/kg | 1.3E-05 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.0E-05 |
| | | | Ingestion | CADMIUM | 2.3E+00 | mg/kg | 4.4E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 2.0E+00 | mg/kg | 3.8E-07 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 1.9E-07 |
| | | | Ingestion | COBALT | 1.1E+00 | mg/kg | 2.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 6.0E-01 | mg/kg | 1.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 6.3E+03 | mg/kg | 1.2E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.9E+02 | mg/kg | 3.6E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 8.5E-01 | mg/kg | 1.6E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 1.2E+01 | mg/kg | 2.4E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | BWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E-01 | mg/kg | 2.6E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.6E-08 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **2.0E-05** |
| Soil | Soil (0-2 ft bgs) | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.8E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 1.4E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 1.1E+02 | mg/kg | 2.8E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 4.2E-06 |
| | | | Dermal | CADMIUM | 2.3E+00 | mg/kg | 1.8E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 2.0E+00 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 1.1E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 6.0E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 6.3E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.9E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 8.5E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 1.2E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 1.4E-01 | mg/kg | 1.4E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.4E-08 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **4.2E-06** |
| Soil | Particulates in Air | BWL | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 1.2E-06 | mg/m3 | 6.0E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ANTIMONY | 4.4E-10 | mg/m3 | 2.2E-08 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ARSENIC | 3.6E-08 | mg/m3 | 1.8E-06 | µg/m3 | 4.3E-03 | (µg/m3)-1 | 7.8E-09 |
| | | | Inhalation | CADMIUM | 7.1E-10 | mg/m3 | 3.6E-08 | µg/m3 | 1.8E-03 | (µg/m3)-1 | 6.5E-11 |
| | | | Inhalation | CHROMIUM | 6.2E-10 | mg/m3 | 3.2E-08 | µg/m3 | 8.4E-02 | (µg/m3)-1 | 2.7E-09 |
| | | | Inhalation | COBALT | 3.4E-10 | mg/m3 | 1.7E-08 | µg/m3 | 9.0E-03 | (µg/m3)-1 | 1.5E-10 |
| | | | Inhalation | CYANIDE | 7.9E-06 | mg/m3 | 4.0E-04 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | IRON | 1.9E-06 | mg/m3 | 9.9E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | LEAD | 5.8E-08 | mg/m3 | 3.0E-06 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | THALLIUM | 2.6E-10 | mg/m3 | 1.3E-08 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | VANADIUM | 3.9E-09 | mg/m3 | 2.0E-07 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)PYRENE | 4.2E-11 | mg/m3 | 2.1E-09 | µg/m3 | 6.0E-04 | (µg/m3)-1 | 1.3E-12 |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **1.1E-08** |
| Sediment | Sediment | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.5E+04 | mg/kg | 8.2E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 7.3E+00 | mg/kg | 4.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 2.8E+02 | mg/kg | 9.5E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.4E-05 |
| | | | Ingestion | CADMIUM | 1.3E+01 | mg/kg | 7.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 7.8E+00 | mg/kg | 4.3E-07 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 2.2E-07 |
| | | | Ingestion | COBALT | 1.7E+01 | mg/kg | 9.4E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.8E+02 | mg/kg | 9.8E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Ingestion | CYANIDE | 1.5E+01 | mg/kg | 8.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 4.2E+04 | mg/kg | 2.4E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.5E+03 | mg/kg | 8.3E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 6.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 5.6E+01 | mg/kg | 3.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ZINC | 1.1E+03 | mg/kg | 6.3E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 8.0E-02 | mg/kg | 4.5E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 9.0E-09 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 7.5E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 7.5E-09 |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 7.7E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 7.7E-08 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 1.1E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.1E-08 |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 1.1E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 1.1E-09 |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 1.6E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.6E-08 |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 4.2E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.2E-09 |
| | | | Ingestion | NAPHTHALENE | 2.8E+00 | mg/kg | 1.6E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **VOCs** | | | | | | | |
| | | | Ingestion | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | 3.7E-09 | mg/kg-d | 4.6E-02 | (mg/kg-d)-1 | 1.7E-10 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **1.5E-05** |
| Sediment | Sediment | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.5E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 7.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 2.8E+02 | mg/kg | 5.7E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 8.6E-06 |
| | | | Dermal | CADMIUM | 1.3E+01 | mg/kg | 9.0E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 7.8E+00 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 1.7E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.8E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 1.5E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 4.2E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.5E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 5.6E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ZINC | 1.1E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 8.0E-02 | mg/kg | 7.6E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.5E-08 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 1.2E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.2E-08 |
| | | | Dermal | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 1.2E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.2E-07 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 1.8E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.8E-08 |
| | | | Dermal | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 1.7E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 1.7E-09 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 2.5E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.5E-08 |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 6.5E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 6.5E-09 |
| | | | Dermal | NAPHTHALENE | 2.8E+00 | mg/kg | 2.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **VOCs** | | | | | | | |
| | | | Dermal | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | NA | mg/kg-d | 4.6E-02 | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **8.8E-06** |
| Surface Water | Surface Water | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.3E+00 | mg/L | 4.3E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 1.2E-03 | mg/L | 3.9E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 3.1E-02 | mg/L | 1.0E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.5E-07 |
| | | | Dermal | CADMIUM | 6.2E-04 | mg/L | 2.1E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 4.5E-03 | mg/L | 1.5E-08 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 3.0E-07 |
| | | | Dermal | COBALT | 1.0E-03 | mg/L | 1.4E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 2.0E-03 | mg/L | 6.8E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 6.5E+00 | mg/L | 2.2E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.6E-02 | mg/L | 8.6E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 7.0E-02 | mg/L | 2.4E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 1.2E-03 | mg/L | 4.2E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 2.5E-03 | mg/L | 8.3E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 3.4E-05 | mg/L | 3.8E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.8E-07 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **8E-07** |
| **Exposure Point Total (BWL)** | | | | | | | | | | | **5E-05** |
| Soil | Soil (0-2 ft bgs) | HC | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 9.2E+03 | mg/kg | 1.8E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 5.3E+00 | mg/kg | 1.0E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 5.0E+02 | mg/kg | 5.7E-05 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 8.5E-05 |
| | | | Ingestion | BARIUM | 1.9E+03 | mg/kg | 3.7E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CADMIUM | 2.9E+00 | mg/kg | 5.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 3.2E+01 | mg/kg | 6.1E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 3.1E-06 |
| | | | Ingestion | COBALT | 6.3E+00 | mg/kg | 1.2E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.4E+02 | mg/kg | 2.7E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 4.9E+01 | mg/kg | 9.3E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 2.8E+04 | mg/kg | 5.3E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 3.3E+03 | mg/kg | 6.2E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 3.4E+02 | mg/kg | 6.5E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | HC | Ingestion | MERCURY | 7.7E-01 | mg/kg | 1.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | NICKEL | 1.4E+01 | mg/kg | 2.6E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 6.6E-01 | mg/kg | 1.3E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 3.0E+01 | mg/kg | 5.8E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ZINC | 5.3E+02 | mg/kg | 1.0E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 5.5E-02 | mg/kg | 1.0E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 2.1E-08 |
| | | | Ingestion | AROCLOR-1260 | 1.7E-01 | mg/kg | 3.1E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 6.3E-08 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.6E+00 | mg/kg | 3.0E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.0E-08 |
| | | | Ingestion | BENZO(A)PYRENE | 1.8E+00 | mg/kg | 3.3E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.3E-07 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 3.8E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.8E-08 |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.8E+00 | mg/kg | 3.5E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 3.5E-09 |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 3.0E-01 | mg/kg | 5.6E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 5.6E-08 |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.7E-01 | mg/kg | 1.5E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.5E-08 |
| | | | Ingestion | NAPHTHALENE | 2.7E-01 | mg/kg | 5.1E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **8.9E-05** |
| Soil | Soil (0-2 ft bgs) | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 9.2E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 5.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 5.0E+02 | mg/kg | 1.2E-05 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.8E-05 |
| | | | Dermal | BARIUM | 1.9E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CADMIUM | 2.9E+00 | mg/kg | 2.3E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 3.2E+01 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 6.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.4E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.9E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 2.8E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 3.3E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 3.4E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MERCURY | 7.7E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | NICKEL | 1.4E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 6.6E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 3.0E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ZINC | 5.3E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 5.5E-02 | mg/kg | 6.2E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.2E-08 |
| | | | Dermal | AROCLOR-1260 | 1.7E-01 | mg/kg | 1.9E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 3.7E-08 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | HC | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.6E+00 | mg/kg | 1.7E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.7E-08 |
| | | | Dermal | BENZO(A)PYRENE | 1.8E+00 | mg/kg | 1.8E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.8E-07 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 2.1E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.1E-08 |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.8E+00 | mg/kg | 1.9E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 1.9E-09 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 3.0E-01 | mg/kg | 3.1E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.1E-08 |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.7E-01 | mg/kg | 8.1E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 8.1E-09 |
| | | | Dermal | NAPHTHALENE | 2.7E-01 | mg/kg | 2.8E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **1.8E-05** |
| Soil | Particulates in Air | HC | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 2.8E-06 | mg/m3 | 1.4E-04 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ANTIMONY | 1.6E-09 | mg/m3 | 8.4E-08 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ARSENIC | 1.5E-07 | mg/m3 | 7.8E-06 | µg/m3 | 4.3E-03 | (µg/m3)-1 | 3.4E-08 |
| | | | Inhalation | BARIUM | 6.0E-07 | mg/m3 | 3.1E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | CADMIUM | 9.0E-10 | mg/m3 | 4.6E-08 | µg/m3 | 1.8E-03 | (µg/m3)-1 | 8.2E-11 |
| | | | Inhalation | CHROMIUM | 9.9E-09 | mg/m3 | 5.1E-07 | µg/m3 | 8.4E-02 | (µg/m3)-1 | 4.3E-08 |
| | | | Inhalation | COBALT | 1.9E-09 | mg/m3 | 9.9E-08 | µg/m3 | 9.0E-03 | (µg/m3)-1 | 8.9E-10 |
| | | | Inhalation | COPPER | 4.4E-08 | mg/m3 | 2.2E-06 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | CYANIDE | 6.5E-04 | mg/m3 | 3.3E-02 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | IRON | 8.5E-06 | mg/m3 | 4.3E-04 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | LEAD | 1.0E-06 | mg/m3 | 5.2E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | MANGANESE | 1.0E-07 | mg/m3 | 5.3E-06 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | MERCURY | 2.4E-10 | mg/m3 | 1.2E-08 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | NICKEL | 4.2E-09 | mg/m3 | 2.2E-07 | µg/m3 | 2.6E-04 | (µg/m3)-1 | 5.6E-11 |
| | | | Inhalation | THALLIUM | 2.0E-10 | mg/m3 | 1.0E-08 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | VANADIUM | 9.4E-09 | mg/m3 | 4.8E-07 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ZINC | 1.6E-07 | mg/m3 | 8.4E-06 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | **PEST/PCB** | | | | | | | |
| | | | Inhalation | AROCLOR-1254 | 5.1E-08 | mg/m3 | 2.6E-06 | µg/m3 | 5.7E-04 | (µg/m3)-1 | 1.5E-09 |
| | | | Inhalation | AROCLOR-1260 | 9.8E-08 | mg/m3 | 5.0E-06 | µg/m3 | 5.7E-04 | (µg/m3)-1 | 2.8E-09 |
| | | | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)ANTHRACENE | 2.8E-07 | mg/m3 | 1.4E-05 | µg/m3 | 6.0E-05 | (µg/m3)-1 | 8.6E-10 |
| | | | Inhalation | BENZO(A)PYRENE | 5.4E-10 | mg/m3 | 2.8E-08 | µg/m3 | 6.0E-04 | (µg/m3)-1 | 1.7E-11 |
| | | | Inhalation | BENZO(B)FLUORANTHENE | 6.2E-10 | mg/m3 | 3.2E-08 | µg/m3 | 6.0E-05 | (µg/m3)-1 | 1.9E-12 |
| | | | Inhalation | BENZO(K)FLUORANTHENE | 5.7E-10 | mg/m3 | 2.9E-08 | µg/m3 | 6.0E-06 | (µg/m3)-1 | 1.7E-13 |
| | | | Inhalation | DIBENZO(A,H)ANTHRACENE | 9.2E-11 | mg/m3 | 4.7E-09 | µg/m3 | 6.0E-04 | (µg/m3)-1 | 2.8E-12 |
| | | | Inhalation | INDENO(1,2,3-CD)PYRENE | 2.4E-10 | mg/m3 | 1.2E-08 | µg/m3 | 6.0E-05 | (µg/m3)-1 | 7.3E-13 |
| | | | Inhalation | NAPHTHALENE | 4.5E-06 | mg/m3 | 2.3E-04 | µg/m3 | 3.4E-05 | (µg/m3)-1 | 7.8E-09 |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **9.0E-08** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | HC | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 8.3E+03 | mg/kg | 4.7E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 2.5E+00 | mg/kg | 1.4E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 3.9E+02 | mg/kg | 1.3E-05 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.9E-05 |
| | | | Ingestion | BARIUM | 1.0E+03 | mg/kg | 5.6E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CADMIUM | 4.5E+00 | mg/kg | 2.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 2.2E+01 | mg/kg | 1.2E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 6.2E-07 |
| | | | Ingestion | COBALT | 5.0E+00 | mg/kg | 2.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.7E+02 | mg/kg | 9.5E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 4.8E+01 | mg/kg | 2.7E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 1.7E+04 | mg/kg | 9.6E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 2.9E+03 | mg/kg | 1.6E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 8.1E+01 | mg/kg | 4.6E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | NICKEL | 3.3E+01 | mg/kg | 1.9E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 1.6E+00 | mg/kg | 9.2E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 2.4E+01 | mg/kg | 1.4E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ZINC | 4.9E+02 | mg/kg | 2.7E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.4E-01 | mg/kg | 7.6E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.5E-08 |
| | | | Ingestion | AROCLOR-1260 | 5.8E-02 | mg/kg | 3.2E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 6.5E-09 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 7.1E-01 | mg/kg | 4.0E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.0E-09 |
| | | | Ingestion | BENZO(A)PYRENE | 7.0E-01 | mg/kg | 3.9E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.9E-08 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 9.5E-01 | mg/kg | 5.3E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 5.3E-09 |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.9E-01 | mg/kg | 1.1E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.1E-08 |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 3.9E-01 | mg/kg | 2.2E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.2E-09 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **2.0E-05** |
| Sediment | Sediment | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 8.3E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 2.5E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 3.9E+02 | mg/kg | 7.8E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.2E-05 |
| | | | Dermal | BARIUM | 1.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CADMIUM | 4.5E+00 | mg/kg | 3.1E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 2.2E+01 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 5.0E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.7E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.8E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 1.7E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.9E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 8.1E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | NICKEL | 3.3E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | HC | Dermal | THALLIUM | 1.6E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 2.4E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ZINC | 4.9E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.4E-01 | mg/kg | 1.3E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 2.6E-08 |
| | | | Dermal | AROCLOR-1260 | 5.8E-02 | mg/kg | 5.5E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.1E-08 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 7.1E-01 | mg/kg | 6.2E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 6.2E-09 |
| | | | Dermal | BENZO(A)PYRENE | 7.0E-01 | mg/kg | 6.1E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 6.1E-08 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 9.5E-01 | mg/kg | 8.3E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 8.3E-09 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.9E-01 | mg/kg | 1.7E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.7E-08 |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 3.9E-01 | mg/kg | 3.4E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.4E-09 |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **1.2E-05** |
| Surface Water | Surface Water | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 6.2E+00 | mg/L | 2.1E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 3.4E-03 | mg/L | 1.1E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 1.1E-01 | mg/L | 3.6E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 5.5E-07 |
| | | | Dermal | BARIUM | 4.5E-01 | mg/L | 1.5E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CADMIUM | 2.5E-03 | mg/L | 8.4E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 1.2E-01 | mg/L | 3.9E-07 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 7.9E-06 |
| | | | Dermal | COBALT | 2.7E-03 | mg/L | 3.7E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 2.8E-02 | mg/L | 9.5E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 8.6E-03 | mg/L | 2.9E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 1.4E+01 | mg/L | 4.6E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.4E-01 | mg/L | 8.0E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.6E-01 | mg/L | 5.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MERCURY | 2.0E-04 | mg/L | 6.8E-10 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 5.4E-03 | mg/L | 1.8E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 5.1E-03 | mg/L | 1.7E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ZINC | 4.8E-01 | mg/L | 9.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **8E-06** |
| **Exposure Point Total (HC)** | | | | | | | | | | | **1E-04** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 4.6E+03 | mg/kg | 8.8E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 3.6E+00 | mg/kg | 6.9E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 8.4E+00 | mg/kg | 9.6E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.4E-06 |
| | | | Ingestion | CHROMIUM | 9.2E-01 | mg/kg | 1.8E-07 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 8.8E-08 |
| | | | Ingestion | COBALT | 8.7E-01 | mg/kg | 1.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 3.7E-01 | mg/kg | 7.1E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 7.8E+03 | mg/kg | 1.5E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 2.1E+02 | mg/kg | 4.1E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 4.4E-01 | mg/kg | 8.4E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 1.3E-01 | mg/kg | 2.4E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.4E-08 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.6E-01 | mg/kg | 4.9E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.9E-09 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **1.6E-06** |
| Soil | Soil (0-2 ft bgs) | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 4.6E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 3.6E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 8.4E+00 | mg/kg | 2.0E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 3.1E-07 |
| | | | Dermal | CHROMIUM | 9.2E-01 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 8.7E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 3.7E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 7.8E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 4.4E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 1.3E-01 | mg/kg | 1.3E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.3E-08 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.6E-01 | mg/kg | 2.7E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.7E-09 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **3.2E-07** |
| Soil | Particulates in Air | KWL | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 1.4E-06 | mg/m3 | 7.2E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ANTIMONY | 1.1E-09 | mg/m3 | 5.7E-08 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ARSENIC | 2.6E-09 | mg/m3 | 1.3E-07 | µg/m3 | 4.3E-03 | (µg/m3)-1 | 5.7E-10 |
| | | | Inhalation | CHROMIUM | 2.9E-10 | mg/m3 | 1.5E-08 | µg/m3 | 8.4E-02 | (µg/m3)-1 | 1.2E-09 |
| | | | Inhalation | COBALT | 2.7E-10 | mg/m3 | 1.4E-08 | µg/m3 | 9.0E-03 | (µg/m3)-1 | 1.2E-10 |
| | | | Inhalation | CYANIDE | 4.9E-06 | mg/m3 | 2.5E-04 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | IRON | 2.4E-06 | mg/m3 | 1.2E-04 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | LEAD | 6.6E-08 | mg/m3 | 3.3E-06 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | THALLIUM | 1.4E-10 | mg/m3 | 6.9E-09 | µg/m3 | NA | (µg/m3)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Particulates in Air (sc | KWL | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)PYRENE | 3.9E-11 | mg/m3 | 2.0E-09 | µg/m3 | 6.0E-04 | (µg/m3)-1 | 1.2E-12 |
| | | | Inhalation | BENZO(B)FLUORANTHENE | 7.9E-11 | mg/m3 | 4.0E-09 | µg/m3 | 6.0E-05 | (µg/m3)-1 | 2.4E-13 |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **1.9E-09** |
| Sediment | Sediment | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.6E+04 | mg/kg | 9.0E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 2.0E+00 | mg/kg | 1.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 8.8E+01 | mg/kg | 3.0E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 4.4E-06 |
| | | | Ingestion | CADMIUM | 7.7E+00 | mg/kg | 4.3E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 8.6E+00 | mg/kg | 4.8E-07 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 2.4E-07 |
| | | | Ingestion | COBALT | 8.6E+00 | mg/kg | 4.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 2.1E+02 | mg/kg | 1.2E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 4.1E+00 | mg/kg | 2.3E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 2.7E+04 | mg/kg | 1.5E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.0E+03 | mg/kg | 5.7E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.4E+02 | mg/kg | 7.9E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | NICKEL | 3.7E+01 | mg/kg | 2.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 4.7E-01 | mg/kg | 2.6E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 2.6E+01 | mg/kg | 1.5E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.6E-01 | mg/kg | 9.2E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.8E-08 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 6.4E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 6.4E-09 |
| | | | Ingestion | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 6.0E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 6.0E-08 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 7.8E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 7.8E-09 |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 6.8E-08 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 6.8E-10 |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 9.1E-09 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 9.1E-09 |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 2.3E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.3E-09 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **4.8E-06** |
| Sediment | Sediment | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.6E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 2.0E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 8.8E+01 | mg/kg | 1.8E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.7E-06 |
| | | | Dermal | CADMIUM | 7.7E+00 | mg/kg | 5.2E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 8.6E+00 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 8.6E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 2.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.1E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 2.7E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.4E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | KWL | Dermal | NICKEL | 3.7E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 4.7E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 2.6E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.6E-01 | mg/kg | 1.6E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 3.1E-08 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 1.0E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.0E-08 |
| | | | Dermal | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 9.4E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 9.4E-08 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 1.2E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.2E-08 |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 1.1E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 1.1E-09 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 1.4E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.4E-08 |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 3.6E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.6E-09 |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **2.8E-06** |
| Surface Water | Surface Water | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.4E+00 | mg/L | 4.6E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 3.7E-03 | mg/L | 1.2E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 1.7E-02 | mg/L | 5.6E-08 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 8.5E-08 |
| | | | Dermal | CHROMIUM | 5.3E-03 | mg/L | 1.8E-08 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 3.6E-07 |
| | | | Dermal | COBALT | 1.6E-03 | mg/L | 2.2E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 1.8E-03 | mg/L | 6.0E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 3.6E+00 | mg/L | 1.2E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.9E-02 | mg/L | 9.9E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 8.0E-02 | mg/L | 2.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 5.8E-03 | mg/L | 2.0E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **4E-07** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **1E-05** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |

**Ingestion - Soil**

$$\text{Intake Factor (IF)} = \frac{IR \times FS \times EF \times ED \times CF}{BW \times AT} = 1.9E\text{-}07 \text{ (Adult)}$$

| | | |
|---|---|---|
| IR | Ingestion Rate (mg/day) | 100 |
| FS | Fraction from Contaminated Source | 1 |
| EF | Soil Ingestion Exposure Frequency (days/year) | 150 |
| ED | Soil Ingestion Exposure Duration (years) | 26 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 80 |
| AT | Averaging Time (days) | 25,550 |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{soil} * IF * B$

(B) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Dermal - Soil**

$$\text{Intake Factor (IF)} = \frac{SA \times AF \times EF \times ED \times CF}{BW \times AT} = 8.1E\text{-}07 \text{ (Adult)}$$

| | | |
|---|---|---|
| SA | Surface Area Exposed to Soil ($cm^2$/day) | 6,032 |
| AF | Soil Skin Adherence Factor ($mg/cm^2$) | 0.07 |
| EF | Soil Dermal Exposure Frequency (days/year) | 150 |
| ED | Soil Dermal Exposure Duration (years) | 26 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 80 |
| AT | Averaging Time (days) | 25,550 |

$Intake_{derm}(mg/kg{\cdot}d) = EPC_{soil} * IF * ABS$

(ABS) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |

**Inhalation - Soil**

$$\text{Intake Factor (IF)} = \frac{EF \times ED \times ET \times CF1 \times CF2}{AT} =$$

5.1E+01 (Adult)

| | | |
|---|---|---|
| EF | Soil Exposure Frequency (days/year) | 150 |
| ED | Soil Exposure Duration (years) | 26 |
| ET | Soil Exposure Time (hours/day) | 8 |
| CF1 | Conversion Factor (days/hours) | 0.042 |
| CF2 | Conversion Factor (µg/mg) | 1,000 |
| AT | Averaging Time (days) | 25,550 |

$EPC_{air} = EPC_{soil}$ x [1/Volatilization Factor (VF) + 1/Particulate Emissions Factor (PEF)]

Exposure = $EPC_{air}$ x IF

Cancer Risk = Exposure x Inhalation Unit Risk (IUR)

**Ingestion - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{IR \times FS \times EF \times ED \times CF}{BW \times AT} =$$

5.6E-08 (Adult)

| | | |
|---|---|---|
| IR | Ingestion Rate (mg/day) | 100 |
| FS | Fraction from Contaminated Source | 1 |
| EF | Sediment Ingestion Exposure Frequency (days/year) | 44 |
| ED | Sediment Ingestion Exposure Duration (years) | 26 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 80 |
| AT | Averaging Time (days) | 25,550 |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{sediment}*IF*B$

(B) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |

**Dermal - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{SA \times AF \times EF \times ED \times CF}{BW \times AT}$$

| = | 6.8E-07 (Adult) |
|---|---|

| | | |
|---|---|---|
| SA | Surface Area Exposed to Sediment ($cm^2$/day) | 6,032 |
| AF | Sediment Skin Adherence Factor ($mg/cm^2$) | 0.2 |
| EF | Sediment Dermal Exposure Frequency (days/year) | 44 |
| ED | Sediment Dermal Exposure Duration (years) | 26 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 80 |
| AT | Averaging Time (days) | 25,550 |

$Intake_{derm}(mg/kg{\cdot}d) = EPC_{sediment} * IF * ABS$

(ABS) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Dermal - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{SA \times EV \times EF \times ED}{BW \times AT}$$

| = | 3.4E+00 (Adult) |
|---|---|

| | | |
|---|---|---|
| SA | Surface Area Exposed to Surface Water ($cm^2$) | 6,032 |
| EF | Surface Water Dermal Exposure Frequency (days/year) | 44 |
| ED | Surface Water Dermal Exposure Duration (years) | 26 |
| EV | Events per Day (events/day) | 1 |
| BW | Body Weight (kg) | 80 |
| AT | Averaging Time (days) | 25,550 |

$Intake_{derm}(mg/kg{\cdot}d) = IF \times \text{Absorbed Dose per Event } (DA_{event})$

($DA_{event}$) presented in Table 4.6

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Table 7.2**
**Calculation of Chemical Cancer Risks for Recreator**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.0E+03 | mg/kg | 1.2E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 2.3E+00 | mg/kg | 8.8E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 9.8E+00 | mg/kg | 2.3E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 3.4E-07 |
| | | | Ingestion | CHROMIUM | 8.0E-01 | mg/kg | 9.3E-08 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 4.7E-08 (a) |
| | | | Ingestion | COBALT | 6.2E+00 | mg/kg | 2.4E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.0E+02 | mg/kg | 3.9E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 2.7E+00 | mg/kg | 1.0E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 8.0E+03 | mg/kg | 3.1E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.7E+02 | mg/kg | 6.6E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 4.2E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 8.6E-01 | mg/kg | 3.3E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 6.5E-02 | mg/kg | 2.5E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 5.1E-09 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 2.3E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.3E-07 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 1.7E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.7E-06 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 3.4E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.4E-07 (a) |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 7.3E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 7.3E-09 (a) |
| | | | Ingestion | CHRYSENE | 3.0E+01 | mg/kg | 3.5E-06 | mg/kg-d | 1.0E-03 | (mg/kg-d)-1 | 3.5E-09 (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 1.7E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.7E-07 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 4.7E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.7E-08 (a) |
| | | | Ingestion | **TICs** | | | | | | | |
| | | | Ingestion | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 4.7E-07 | mg/kg-d | 1.2E+00 | (mg/kg-d)-1 | 5.6E-07 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **3.5E-06** |
| Sediment | Sediment | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 2.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 9.8E+00 | mg/kg | 1.1E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.6E-07 |
| | | | Dermal | CHROMIUM | 8.0E-01 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 6.2E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.0E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 2.7E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 8.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.7E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 8.6E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 6.5E-02 | mg/kg | 3.3E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 6.6E-09 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 2.8E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.8E-07 (a) |
| | | | Dermal | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 2.1E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.1E-06 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 4.2E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.2E-07 (a) |
| | | | Dermal | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 8.8E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 8.8E-09 (a) |
| | | | Dermal | CHRYSENE | 3.0E+01 | mg/kg | 4.2E-06 | mg/kg-d | 1.0E-03 | (mg/kg-d)-1 | 4.2E-09 (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 2.1E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.1E-07 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 5.7E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 5.7E-08 (a) |
| | | | Dermal | **TICs** | | | | | | | |
| | | | Dermal | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 5.6E-07 | mg/kg-d | 1.2E+00 | (mg/kg-d)-1 | 6.8E-07 |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **3.9E-06** |
| Surface Water | Surface Water | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ARSENIC | 7.8E-03 | mg/L | 1.4E-08 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.1E-08 |
| | | | Dermal | CHROMIUM | 2.6E-03 | mg/L | 1.4E-08 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 2.8E-07 (a) |
| | | | Dermal | COBALT | 2.1E-03 | mg/L | 1.5E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.4E-03 | mg/L | 8.0E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 1.1E+01 | mg/L | 2.0E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 9.5E-01 | mg/L | 1.7E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 7.9E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 7.9E-08 (a) |
| | | | Dermal | BENZO(A)PYRENE | 2.0E-04 | mg/L | 3.5E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.5E-06 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 1.4E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.4E-07 (a) |
| | | | Dermal | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 3.3E-05 | mg/kg-d | 1.4E-02 | (mg/kg-d)-1 | 4.6E-07 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 1.2E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.2E-06 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 1.9E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.9E-07 (a) |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **6E-06** |
| **Exposure Point Total (SL)** | | | | | | | | | | | **1E-05** |
| Soil | Soil (0-2 ft bgs) | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.8E+03 | mg/kg | 5.0E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 1.4E+00 | mg/kg | 1.9E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 1.1E+02 | mg/kg | 9.1E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.4E-05 |
| | | | Ingestion | CADMIUM | 2.3E+00 | mg/kg | 3.0E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 2.0E+00 | mg/kg | 8.0E-07 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 4.0E-07 (a) |
| | | | Ingestion | COBALT | 1.1E+00 | mg/kg | 1.4E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 6.0E-01 | mg/kg | 7.9E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 6.3E+03 | mg/kg | 8.3E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.9E+02 | mg/kg | 2.5E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 8.5E-01 | mg/kg | 1.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 1.2E+01 | mg/kg | 1.7E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | BWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E-01 | mg/kg | 5.4E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 5.4E-08 (a) |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **1.4E-05** |
| Soil | Soil (0-2 ft bgs) | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.8E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 1.4E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 1.1E+02 | mg/kg | 1.5E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.2E-06 |
| | | | Dermal | CADMIUM | 2.3E+00 | mg/kg | 9.8E-10 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 2.0E+00 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 1.1E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 6.0E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 6.3E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.9E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 8.5E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 1.2E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 1.4E-01 | mg/kg | 2.3E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.3E-08 (a) |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **2.2E-06** |
| Soil | Particulates in Air | BWL | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 1.2E-06 | mg/m3 | 2.3E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ANTIMONY | 4.4E-10 | mg/m3 | 8.6E-09 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ARSENIC | 3.6E-08 | mg/m3 | 6.9E-07 | µg/m3 | 4.3E-03 | (µg/m3)-1 | 3.0E-09 |
| | | | Inhalation | CADMIUM | 7.1E-10 | mg/m3 | 1.4E-08 | µg/m3 | 1.8E-03 | (µg/m3)-1 | 2.5E-11 |
| | | | Inhalation | CHROMIUM | 6.2E-10 | mg/m3 | 3.7E-08 | µg/m3 | 8.4E-02 | (µg/m3)-1 | 3.1E-09 (a) |
| | | | Inhalation | COBALT | 3.4E-10 | mg/m3 | 6.6E-09 | µg/m3 | 9.0E-03 | (µg/m3)-1 | 5.9E-11 |
| | | | Inhalation | CYANIDE | 7.9E-06 | mg/m3 | 1.6E-04 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | IRON | 1.9E-06 | mg/m3 | 3.8E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | LEAD | 5.8E-08 | mg/m3 | 1.1E-06 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | THALLIUM | 2.6E-10 | mg/m3 | 5.2E-09 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | VANADIUM | 3.9E-09 | mg/m3 | 7.5E-08 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)PYRENE | 4.2E-11 | mg/m3 | 2.5E-09 | µg/m3 | 6.0E-04 | (µg/m3)-1 | 1.5E-12 (a) |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **6.1E-09** |
| Sediment | Sediment | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.5E+04 | mg/kg | 5.7E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 7.3E+00 | mg/kg | 2.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 2.8E+02 | mg/kg | 6.6E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 9.9E-06 |
| | | | Ingestion | CADMIUM | 1.3E+01 | mg/kg | 5.2E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 7.8E+00 | mg/kg | 9.1E-07 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 4.5E-07 (a) |
| | | | Ingestion | COBALT | 1.7E+01 | mg/kg | 6.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.8E+02 | mg/kg | 6.8E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Ingestion | CYANIDE | 1.5E+01 | mg/kg | 5.9E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 4.2E+04 | mg/kg | 1.6E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.5E+03 | mg/kg | 5.8E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 4.3E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 5.6E+01 | mg/kg | 2.2E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ZINC | 1.1E+03 | mg/kg | 4.3E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 8.0E-02 | mg/kg | 3.1E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 6.2E-09 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 1.6E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.6E-08 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 1.6E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.6E-07 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 2.4E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.4E-08 (a) |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 2.3E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 2.3E-09 (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 3.3E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.3E-08 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 8.7E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 8.7E-09 (a) |
| | | | Ingestion | NAPHTHALENE | 2.8E+00 | mg/kg | 1.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **VOCs** | | | | | | | |
| | | | Ingestion | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | 3.7E-09 | mg/kg-d | 4.6E-02 | (mg/kg-d)-1 | 1.7E-10 (a) |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **1.1E-05** |
| Sediment | Sediment | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.5E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 7.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 2.8E+02 | mg/kg | 3.1E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 4.6E-06 |
| | | | Dermal | CADMIUM | 1.3E+01 | mg/kg | 4.8E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 7.8E+00 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 1.7E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.8E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 1.5E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 4.2E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.5E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 5.6E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ZINC | 1.1E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 8.0E-02 | mg/kg | 4.0E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 8.1E-09 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 1.9E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.9E-08 (a) |
| | | | Dermal | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 1.9E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.9E-07 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 2.8E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.8E-08 (a) |
| | | | Dermal | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 2.8E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 2.8E-09 (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 4.0E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 4.0E-08 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 1.0E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.0E-08 (a) |
| | | | Dermal | NAPHTHALENE | 2.8E+00 | mg/kg | 1.3E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **VOCs** | | | | | | | |
| | | | Dermal | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | NA | mg/kg-d | 4.6E-02 | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **4.9E-06** |
| Surface Water | Surface Water | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.3E+00 | mg/L | 2.3E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 1.2E-03 | mg/L | 2.1E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 3.1E-02 | mg/L | 5.5E-08 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 8.3E-08 |
| | | | Dermal | CADMIUM | 6.2E-04 | mg/L | 1.1E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 4.5E-03 | mg/L | 2.4E-08 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 4.8E-07 (a) |
| | | | Dermal | COBALT | 1.0E-03 | mg/L | 7.3E-10 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 2.0E-03 | mg/L | 3.6E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 6.5E+00 | mg/L | 1.2E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.6E-02 | mg/L | 4.6E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 7.0E-02 | mg/L | 1.3E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 1.2E-03 | mg/L | 2.2E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 2.5E-03 | mg/L | 4.4E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 3.4E-05 | mg/L | 6.0E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 6.0E-07 (a) |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1E-06** |
| **Exposure Point Total (BWL)** | | | | | | | | | | | **3E-05** |
| Soil | Soil (0-2 ft bgs) | HC | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 9.2E+03 | mg/kg | 1.2E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 5.3E+00 | mg/kg | 7.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 5.0E+02 | mg/kg | 3.9E-05 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 5.9E-05 |
| | | | Ingestion | BARIUM | 1.9E+03 | mg/kg | 2.6E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CADMIUM | 2.9E+00 | mg/kg | 3.9E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 3.2E+01 | mg/kg | 1.3E-05 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 6.4E-06 (a) |
| | | | Ingestion | COBALT | 6.3E+00 | mg/kg | 8.3E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.4E+02 | mg/kg | 1.9E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 4.9E+01 | mg/kg | 6.5E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 2.8E+04 | mg/kg | 3.7E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 3.3E+03 | mg/kg | 4.3E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 3.4E+02 | mg/kg | 4.5E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | HC | Ingestion | MERCURY | 7.7E-01 | mg/kg | 1.0E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | NICKEL | 1.4E+01 | mg/kg | 1.8E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 6.6E-01 | mg/kg | 8.7E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 3.0E+01 | mg/kg | 4.0E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ZINC | 5.3E+02 | mg/kg | 7.1E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 5.5E-02 | mg/kg | 7.3E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.5E-08 |
| | | | Ingestion | AROCLOR-1260 | 1.7E-01 | mg/kg | 2.2E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 4.4E-08 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.6E+00 | mg/kg | 6.3E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 6.3E-08 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 1.8E+00 | mg/kg | 7.0E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 7.0E-07 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 8.0E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 8.0E-08 (a) |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.8E+00 | mg/kg | 7.3E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 7.3E-09 (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 3.0E-01 | mg/kg | 1.2E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.2E-07 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.7E-01 | mg/kg | 3.1E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.1E-08 (a) |
| | | | Ingestion | NAPHTHALENE | 2.7E-01 | mg/kg | 3.5E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **6.7E-05** |
| Soil | Soil (0-2 ft bgs) | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 9.2E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 5.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 5.0E+02 | mg/kg | 6.4E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 9.6E-06 |
| | | | Dermal | BARIUM | 1.9E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CADMIUM | 2.9E+00 | mg/kg | 1.3E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 3.2E+01 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 6.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.4E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.9E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 2.8E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 3.3E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 3.4E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MERCURY | 7.7E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | NICKEL | 1.4E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 6.6E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 3.0E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ZINC | 5.3E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 5.5E-02 | mg/kg | 3.3E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 6.6E-09 |
| | | | Dermal | AROCLOR-1260 | 1.7E-01 | mg/kg | 9.9E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 2.0E-08 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | HC | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.6E+00 | mg/kg | 2.7E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.7E-08 (a) |
| | | | Dermal | BENZO(A)PYRENE | 1.8E+00 | mg/kg | 2.9E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.9E-07 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 3.4E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.4E-08 (a) |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.8E+00 | mg/kg | 3.1E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 3.1E-09 (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 3.0E-01 | mg/kg | 5.0E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 5.0E-08 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.7E-01 | mg/kg | 1.3E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.3E-08 (a) |
| | | | Dermal | NAPHTHALENE | 2.7E-01 | mg/kg | 1.5E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **1.0E-05** |
| Soil | Particulates in Air | HC | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 2.8E-06 | mg/m3 | 5.6E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ANTIMONY | 1.6E-09 | mg/m3 | 3.2E-08 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ARSENIC | 1.5E-07 | mg/m3 | 3.0E-06 | µg/m3 | 4.3E-03 | (µg/m3)-1 | 1.3E-08 |
| | | | Inhalation | BARIUM | 6.0E-07 | mg/m3 | 1.2E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | CADMIUM | 9.0E-10 | mg/m3 | 1.8E-08 | µg/m3 | 1.8E-03 | (µg/m3)-1 | 3.2E-11 |
| | | | Inhalation | CHROMIUM | 9.9E-09 | mg/m3 | 5.8E-07 | µg/m3 | 8.4E-02 | (µg/m3)-1 | 4.9E-08 (a) |
| | | | Inhalation | COBALT | 1.9E-09 | mg/m3 | 3.8E-08 | µg/m3 | 9.0E-03 | (µg/m3)-1 | 3.4E-10 |
| | | | Inhalation | COPPER | 4.4E-08 | mg/m3 | 8.6E-07 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | CYANIDE | 6.5E-04 | mg/m3 | 1.3E-02 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | IRON | 8.5E-06 | mg/m3 | 1.7E-04 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | LEAD | 1.0E-06 | mg/m3 | 2.0E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | MANGANESE | 1.0E-07 | mg/m3 | 2.1E-06 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | MERCURY | 2.4E-10 | mg/m3 | 4.7E-09 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | NICKEL | 4.2E-09 | mg/m3 | 8.3E-08 | µg/m3 | 2.6E-04 | (µg/m3)-1 | 2.2E-11 |
| | | | Inhalation | THALLIUM | 2.0E-10 | mg/m3 | 4.0E-09 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | VANADIUM | 9.4E-09 | mg/m3 | 1.8E-07 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ZINC | 1.6E-07 | mg/m3 | 3.2E-06 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | **PEST/PCB** | | | | | | | |
| | | | Inhalation | AROCLOR-1254 | 5.1E-08 | mg/m3 | 1.0E-06 | µg/m3 | 5.7E-04 | (µg/m3)-1 | 5.7E-10 |
| | | | Inhalation | AROCLOR-1260 | 9.8E-08 | mg/m3 | 1.9E-06 | µg/m3 | 5.7E-04 | (µg/m3)-1 | 1.1E-09 |
| | | | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)ANTHRACENE | 2.8E-07 | mg/m3 | 1.7E-05 | µg/m3 | 6.0E-05 | (µg/m3)-1 | 1.0E-09 (a) |
| | | | Inhalation | BENZO(A)PYRENE | 5.4E-10 | mg/m3 | 3.2E-08 | µg/m3 | 6.0E-04 | (µg/m3)-1 | 1.9E-11 (a) |
| | | | Inhalation | BENZO(B)FLUORANTHENE | 6.2E-10 | mg/m3 | 3.7E-08 | µg/m3 | 6.0E-05 | (µg/m3)-1 | 2.2E-12 (a) |
| | | | Inhalation | BENZO(K)FLUORANTHENE | 5.7E-10 | mg/m3 | 3.4E-08 | µg/m3 | 6.0E-06 | (µg/m3)-1 | 2.0E-13 (a) |
| | | | Inhalation | DIBENZO(A,H)ANTHRACENE | 9.2E-11 | mg/m3 | 5.4E-09 | µg/m3 | 6.0E-04 | (µg/m3)-1 | 3.2E-12 (a) |
| | | | Inhalation | INDENO(1,2,3-CD)PYRENE | 2.4E-10 | mg/m3 | 1.4E-08 | µg/m3 | 6.0E-05 | (µg/m3)-1 | 8.4E-13 (a) |
| | | | Inhalation | NAPHTHALENE | 4.5E-06 | mg/m3 | 8.8E-05 | µg/m3 | 3.4E-05 | (µg/m3)-1 | 3.0E-09 |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **6.8E-08** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | HC | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 8.3E+03 | mg/kg | 3.2E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 2.5E+00 | mg/kg | 9.5E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 3.9E+02 | mg/kg | 9.0E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.3E-05 |
| | | | Ingestion | BARIUM | 1.0E+03 | mg/kg | 3.9E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CADMIUM | 4.5E+00 | mg/kg | 1.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 2.2E+01 | mg/kg | 2.6E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 1.3E-06 (a) |
| | | | Ingestion | COBALT | 5.0E+00 | mg/kg | 1.9E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.7E+02 | mg/kg | 6.6E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 4.8E+01 | mg/kg | 1.9E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 1.7E+04 | mg/kg | 6.7E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 2.9E+03 | mg/kg | 1.1E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 8.1E+01 | mg/kg | 3.2E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | NICKEL | 3.3E+01 | mg/kg | 1.3E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 1.6E+00 | mg/kg | 6.4E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 2.4E+01 | mg/kg | 9.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ZINC | 4.9E+02 | mg/kg | 1.9E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.4E-01 | mg/kg | 5.2E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.0E-08 |
| | | | Ingestion | AROCLOR-1260 | 5.8E-02 | mg/kg | 2.2E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 4.5E-09 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 7.1E-01 | mg/kg | 8.3E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 8.3E-09 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 7.0E-01 | mg/kg | 8.1E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 8.1E-08 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 9.5E-01 | mg/kg | 1.1E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.1E-08 (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.9E-01 | mg/kg | 2.2E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.2E-08 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 3.9E-01 | mg/kg | 4.5E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.5E-09 (a) |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **1.5E-05** |
| Sediment | Sediment | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 8.3E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 2.5E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 3.9E+02 | mg/kg | 4.2E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 6.3E-06 |
| | | | Dermal | BARIUM | 1.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CADMIUM | 4.5E+00 | mg/kg | 1.6E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 2.2E+01 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 5.0E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.7E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.8E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 1.7E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.9E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 8.1E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | NICKEL | 3.3E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | HC | Dermal | THALLIUM | 1.6E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 2.4E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ZINC | 4.9E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.4E-01 | mg/kg | 6.8E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.4E-08 |
| | | | Dermal | AROCLOR-1260 | 5.8E-02 | mg/kg | 2.9E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 5.8E-09 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 7.1E-01 | mg/kg | 1.0E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.0E-08 (a) |
| | | | Dermal | BENZO(A)PYRENE | 7.0E-01 | mg/kg | 9.8E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 9.8E-08 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 9.5E-01 | mg/kg | 1.3E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.3E-08 (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.9E-01 | mg/kg | 2.7E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.7E-08 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 3.9E-01 | mg/kg | 5.5E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 5.5E-09 (a) |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **6.4E-06** |
| Surface Water | Surface Water | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 6.2E+00 | mg/L | 1.1E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 3.4E-03 | mg/L | 6.0E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 1.1E-01 | mg/L | 1.9E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.9E-07 |
| | | | Dermal | BARIUM | 4.5E-01 | mg/L | 8.2E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CADMIUM | 2.5E-03 | mg/L | 4.5E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 1.2E-01 | mg/L | 6.3E-07 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 1.3E-05 (a) |
| | | | Dermal | COBALT | 2.7E-03 | mg/L | 2.0E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 2.8E-02 | mg/L | 5.1E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 8.6E-03 | mg/L | 1.5E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 1.4E+01 | mg/L | 2.5E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.4E-01 | mg/L | 4.3E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.6E-01 | mg/L | 2.9E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MERCURY | 2.0E-04 | mg/L | 3.6E-10 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 5.4E-03 | mg/L | 9.7E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 5.1E-03 | mg/L | 9.2E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ZINC | 4.8E-01 | mg/L | 5.2E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1E-05** |
| **Exposure Point Total (HC)** | | | | | | | | | | | **1E-04** |
| Soil | Soil (0-2 ft bgs) | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 4.6E+03 | mg/kg | 6.1E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 3.6E+00 | mg/kg | 4.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 8.4E+00 | mg/kg | 6.7E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.0E-06 |
| | | | Ingestion | CHROMIUM | 9.2E-01 | mg/kg | 3.7E-07 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 1.8E-07 (a) |
| | | | Ingestion | COBALT | 8.7E-01 | mg/kg | 1.2E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | KWL | Ingestion | CYANIDE | 3.7E-01 | mg/kg | 4.9E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 7.8E+03 | mg/kg | 1.0E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 2.1E+02 | mg/kg | 2.8E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 4.4E-01 | mg/kg | 5.8E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 1.3E-01 | mg/kg | 5.0E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 5.0E-08 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.6E-01 | mg/kg | 1.0E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.0E-08 (a) |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **1.2E-06** |
| Soil | Soil (0-2 ft bgs) | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 4.6E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 3.6E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 8.4E+00 | mg/kg | 1.1E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.6E-07 |
| | | | Dermal | CHROMIUM | 9.2E-01 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 8.7E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 3.7E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 7.8E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 4.4E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 1.3E-01 | mg/kg | 2.1E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.1E-08 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.6E-01 | mg/kg | 4.3E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.3E-09 (a) |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **1.9E-07** |
| Soil | Particulates in Air | KWL | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 1.4E-06 | mg/m3 | 2.8E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ANTIMONY | 1.1E-09 | mg/m3 | 2.2E-08 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ARSENIC | 2.6E-09 | mg/m3 | 5.1E-08 | µg/m3 | 4.3E-03 | (µg/m3)-1 | 2.2E-10 |
| | | | Inhalation | CHROMIUM | 2.9E-10 | mg/m3 | 1.7E-08 | µg/m3 | 8.4E-02 | (µg/m3)-1 | 1.4E-09 (a) |
| | | | Inhalation | COBALT | 2.7E-10 | mg/m3 | 5.3E-09 | µg/m3 | 9.0E-03 | (µg/m3)-1 | 4.7E-11 |
| | | | Inhalation | CYANIDE | 4.9E-06 | mg/m3 | 9.6E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | IRON | 2.4E-06 | mg/m3 | 4.7E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | LEAD | 6.6E-08 | mg/m3 | 1.3E-06 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | THALLIUM | 1.4E-10 | mg/m3 | 2.7E-09 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)PYRENE | 3.9E-11 | mg/m3 | 2.3E-09 | µg/m3 | 6.0E-04 | (µg/m3)-1 | 1.4E-12 (a) |
| | | | Inhalation | BENZO(B)FLUORANTHENE | 7.9E-11 | mg/m3 | 4.7E-09 | µg/m3 | 6.0E-05 | (µg/m3)-1 | 2.8E-13 (a) |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **1.7E-09** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.6E+04 | mg/kg | 6.3E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 2.0E+00 | mg/kg | 7.9E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 8.8E+01 | mg/kg | 2.1E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 3.1E-06 |
| | | | Ingestion | CADMIUM | 7.7E+00 | mg/kg | 3.0E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 8.6E+00 | mg/kg | 1.0E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 5.0E-07 (a) |
| | | | Ingestion | COBALT | 8.6E+00 | mg/kg | 3.3E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 2.1E+02 | mg/kg | 8.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 4.1E+00 | mg/kg | 1.6E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 2.7E+04 | mg/kg | 1.0E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.0E+03 | mg/kg | 3.9E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.4E+02 | mg/kg | 5.5E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | NICKEL | 3.7E+01 | mg/kg | 1.4E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 4.7E-01 | mg/kg | 1.8E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 2.6E+01 | mg/kg | 1.0E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.6E-01 | mg/kg | 6.4E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.3E-08 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 1.3E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.3E-08 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 1.2E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.2E-07 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 1.6E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.6E-08 (a) |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 1.4E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 1.4E-09 (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 1.9E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.9E-08 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 4.8E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.8E-09 (a) |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **3.8E-06** |
| Sediment | Sediment | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.6E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 2.0E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 8.8E+01 | mg/kg | 9.5E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.4E-06 |
| | | | Dermal | CADMIUM | 7.7E+00 | mg/kg | 2.8E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 8.6E+00 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 8.6E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 2.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.1E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 2.7E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.4E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | NICKEL | 3.7E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 4.7E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 2.6E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | KWL | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.6E-01 | mg/kg | 8.3E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.7E-08 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 1.6E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.6E-08 (a) |
| | | | Dermal | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 1.5E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.5E-07 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 1.9E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.9E-08 (a) |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 1.7E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 1.7E-09 (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 2.3E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.3E-08 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 5.8E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 5.8E-09 (a) |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **1.7E-06** |
| Surface Water | Surface Water | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.4E+00 | mg/L | 2.5E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 3.7E-03 | mg/L | 6.7E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 1.7E-02 | mg/L | 3.0E-08 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 4.5E-08 |
| | | | Dermal | CHROMIUM | 5.3E-03 | mg/L | 2.9E-08 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 5.8E-07 (a) |
| | | | Dermal | COBALT | 1.6E-03 | mg/L | 1.2E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 1.8E-03 | mg/L | 3.2E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 3.6E+00 | mg/L | 6.5E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.9E-02 | mg/L | 5.3E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 8.0E-02 | mg/L | 1.4E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 5.8E-03 | mg/L | 1.0E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **6E-07** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **7E-06** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

(a) The mutagen risks were calculated for COPCs identified as having a mutagenic mode of action.

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |

**Ingestion - Soil**

$$\text{Intake Factor (IF)} = \frac{\text{IR x FS x EF x ED x CF x ADAF}}{\text{BW x AT}} =$$

| | | Non-mutagens | Mutagens[a] |
|---|---|---|---|
| | | 1.3E-07 (Adolescent) | 4.0E-07 (6-16 years) |
| IR | Ingestion Rate (mg/day) | 100 | 100 |
| FS | Fraction from Contaminated Source | 1 | 1 |
| EF | Soil Ingestion Exposure Frequency (days/year) | 150 | 150 |
| ED | Soil Ingestion Exposure Duration (years) | 10 | 10 |
| CF | Conversion Factor (kg/mg) | 0.000001 | 0.000001 |
| BW | Body Weight (kg) | 44 | 44 |
| AT | Averaging Time (days) | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 3 |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{soil} * IF * B$

(B) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Dermal - Soil**

$$\text{Intake Factor (IF)} = \frac{\text{SA x AF x EF x ED x CF x ADAF}}{\text{BW x AT}} =$$

| | | Non-mutagens | Mutagens[a] |
|---|---|---|---|
| | | 4.3E-07 (Adolescent) | 1.3E-06 (6-16 years) |
| SA | Surface Area Exposed to Soil ($cm^2$/day) | 4,639 | 4,639 |
| AF | Soil Skin Adherence Factor ($mg/cm^2$) | 0.07 | 0.07 |
| EF | Soil Dermal Exposure Frequency (days/year) | 150 | 150 |
| ED | Soil Dermal Exposure Duration (years) | 10 | 10 |
| CF | Conversion Factor (kg/mg) | 0.000001 | 0.000001 |
| BW | Body Weight (kg) | 44 | 44 |
| AT | Averaging Time (days) | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 3 |

$Intake_{derm}(mg/kg{\cdot}d) = EPC_{soil} * IF * ABS$

(ABS) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |

**Inhalation - Soil**

$$\text{Intake Factor (IF)} = \frac{EF \times ED \times ET \times CF1 \times CF2 \times ADAF}{AT} =$$

| | | Non-mutagens | Mutagens[a] |
|---|---|---|---|
| | | 2.0E+01 (Adolescent) | 5.9E+01 (6-16 years) |
| EF | Soil Exposure Frequency (days/year) | 150 | 150 |
| ED | Soil Exposure Duration (years) | 10 | 10 |
| ET | Soil Exposure Time (hours/day) | 8 | 8 |
| CF1 | Conversion Factor (days/hours) | 0.042 | 0.042 |
| CF2 | Conversion Factor (µg/mg) | 1,000 | 1,000 |
| AT | Averaging Time (days) | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 3 |

$EPC_{air} = EPC_{soil} \times [1/\text{Volatilization Factor (VF)} + 1/\text{Particulate Emissions Factor (PEF)}]$

$\text{Exposure} = EPC_{air} \times IF$

Cancer Risk = Exposure x Inhalation Unit Risk (IUR)

**Ingestion - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{IR \times FS \times EF \times ED \times CF \times ADAF}{BW \times AT} =$$

| | | Non-mutagens | Mutagens[a] |
|---|---|---|---|
| | | 3.9E-08 (Adolescent) | 1.2E-07 (6-16 years) |
| IR | Ingestion Rate (mg/day) | 100 | 100 |
| FS | Fraction from Contaminated Source | 1 | 1 |
| EF | Sediment Ingestion Exposure Frequency (days/year) | 44 | 44 |
| ED | Sediment Ingestion Exposure Duration (years) | 10 | 10 |
| CF | Conversion Factor (kg/mg) | 0.000001 | 0.000001 |
| BW | Body Weight (kg) | 44 | 44 |
| AT | Averaging Time (days) | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 3 |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{sediment} * IF * B$

(B) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC Value | EPC Units | Cancer Risk Calculations: Intake/Exposure Value | Intake/Exposure Units | CSF/Unit Risk Value | CSF/Unit Risk Units | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|

**Dermal - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{SA \times AF \times EF \times ED \times CF \times ADAF}{BW \times AT} =$$

| | | Non-mutagens | Mutagens[a] |
|---|---|---|---|
| | | 3.6E-07 (Adolescent) | 1.1E-06 (6-16 years) |
| SA | Surface Area Exposed to Sediment ($cm^2$/day) | 4,639 | 4,639 |
| AF | Sediment Skin Adherence Factor ($mg/cm^2$) | 0.2 | 0.2 |
| EF | Sediment Dermal Exposure Frequency (days/year) | 44 | 44 |
| ED | Sediment Dermal Exposure Duration (years) | 10 | 10 |
| CF | Conversion Factor (kg/mg) | 0.000001 | 0.000001 |
| BW | Body Weight (kg) | 44 | 44 |
| AT | Averaging Time (days) | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 3 |

$Intake_{derm}(mg/kg{\cdot}d) = EPC_{sediment} * IF * ABS$

(ABS) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Dermal - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{SA \times EV \times EF \times ED \times ADAF}{BW \times AT} =$$

| | | Non-mutagens | Mutagens[a] |
|---|---|---|---|
| | | 1.8E+00 (Adolescent) | 5.4E+00 (6-16 years) |
| SA | Surface Area Exposed to Surface Water ($cm^2$) | 4,639 | 4,639 |
| EF | Surface Water Dermal Exposure Frequency (days/year) | 44 | 44 |
| ED | Surface Water Dermal Exposure Duration (years) | 10 | 10 |
| EV | Events per Day (events/day) | 1 | 1 |
| BW | Body Weight (kg) | 44 | 44 |
| AT | Averaging Time (days) | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 3 |

$Intake_{derm}(mg/kg{\cdot}d)$ = IF x Absorbed Dose per Event ($DA_{event}$)

($DA_{event}$) presented in Table 4.6

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Calculation of Lifetime Average Daily Dose for Recreator - Trichloroethylene in Sediment**

$Intake\ Factor_{ing} = [(CAF_o*(IF_{child}+IF_{adult}))+(MAF_o*(IF_{0-2}+IF_{2-6}+IF_{6-16}+IF_{16-26}))]$

| | | |
|---|---|---|
| Age-dependent Adjustment factor for carcinogens - oral slope factor | $CAF_o$ | 0.804 |
| Age-dependent Adjustment factor for mutagens - oral slope factor | $MAF_o$ | 0.202 |

$Intake\ Factor_{derm} = [(CAF_o*(IF_{child}+IF_{adult})+MAF_o*(IF_{0-2}+IF_{2-6}+IF_{6-16}+IF_{16-26}))]$

**Table 7.3**
**Calculation of Chemical Cancer Risks for Recreator**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.0E+03 | mg/kg | 4.1E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 2.3E+00 | mg/kg | 3.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 9.8E+00 | mg/kg | 8.1E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.2E-06 |
| | | | Ingestion | CHROMIUM | 8.0E-01 | mg/kg | 8.0E-07 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 4.0E-07 (a) |
| | | | Ingestion | COBALT | 6.2E+00 | mg/kg | 8.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.0E+02 | mg/kg | 1.4E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 2.7E+00 | mg/kg | 3.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 8.0E+03 | mg/kg | 1.1E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.7E+02 | mg/kg | 2.3E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 1.5E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 8.6E-01 | mg/kg | 1.2E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 6.5E-02 | mg/kg | 9.0E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.8E-08 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 2.0E-05 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.0E-06 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 1.5E-05 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.5E-05 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 3.0E-05 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.0E-06 (a) |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 6.3E-06 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 6.3E-08 (a) |
| | | | Ingestion | CHRYSENE | 3.0E+01 | mg/kg | 3.0E-05 | mg/kg-d | 1.0E-03 | (mg/kg-d)-1 | 3.0E-08 (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 1.5E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.5E-06 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 4.1E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.1E-07 (a) |
| | | | Ingestion | **TICs** | | | | | | | |
| | | | Ingestion | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 1.7E-06 | mg/kg-d | 1.2E+00 | (mg/kg-d)-1 | 2.0E-06 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **2.5E-05** |
| Sediment | Sediment | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 2.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 9.8E+00 | mg/kg | 9.7E-08 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.4E-07 |
| | | | Dermal | CHROMIUM | 8.0E-01 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 6.2E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.0E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 2.7E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 8.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.7E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 8.6E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 6.5E-02 | mg/kg | 3.0E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 6.0E-09 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 5.4E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 5.4E-07 (a) |
| | | | Dermal | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 4.0E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 4.0E-06 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 8.1E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 8.1E-07 (a) |
| | | | Dermal | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 1.7E-06 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 1.7E-08 (a) |
| | | | Dermal | CHRYSENE | 3.0E+01 | mg/kg | 8.2E-06 | mg/kg-d | 1.0E-03 | (mg/kg-d)-1 | 8.2E-09 (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 4.1E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 4.1E-07 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 1.1E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.1E-07 (a) |
| | | | Dermal | **TICs** | | | | | | | |
| | | | Dermal | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 5.1E-07 | mg/kg-d | 1.2E+00 | (mg/kg-d)-1 | 6.1E-07 |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **6.7E-06** |
| Surface Water | Surface Water | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ARSENIC | 7.8E-03 | mg/L | 1.3E-08 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.9E-08 |
| | | | Dermal | CHROMIUM | 2.6E-03 | mg/L | 2.7E-08 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 5.4E-07 (a) |
| | | | Dermal | COBALT | 2.1E-03 | mg/L | 1.4E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.4E-03 | mg/L | 7.3E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 1.1E+01 | mg/L | 1.9E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 9.5E-01 | mg/L | 1.5E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 1.5E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.5E-07 (a) |
| | | | Dermal | BENZO(A)PYRENE | 2.0E-04 | mg/L | 6.9E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 6.9E-06 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 2.7E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.7E-07 (a) |
| | | | Dermal | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 3.0E-05 | mg/kg-d | 1.4E-02 | (mg/kg-d)-1 | 4.2E-07 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 2.2E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.2E-06 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 3.7E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.7E-07 (a) |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1E-05** |
| **Exposure Point Total (SL)** | | | | | | | | | | | **4E-05** |
| Soil | Soil (0-2 ft bgs) | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.8E+03 | mg/kg | 1.8E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 1.4E+00 | mg/kg | 6.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 1.1E+02 | mg/kg | 3.2E-05 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 4.9E-05 |
| | | | Ingestion | CADMIUM | 2.3E+00 | mg/kg | 1.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 2.0E+00 | mg/kg | 6.9E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 3.4E-06 (a) |
| | | | Ingestion | COBALT | 1.1E+00 | mg/kg | 5.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 6.0E-01 | mg/kg | 2.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 6.3E+03 | mg/kg | 2.9E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.9E+02 | mg/kg | 8.8E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 8.5E-01 | mg/kg | 4.0E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 1.2E+01 | mg/kg | 5.9E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | BWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E-01 | mg/kg | 4.6E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 4.6E-07 (a) |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **5.2E-05** |
| Soil | Soil (0-2 ft bgs) | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.8E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 1.4E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 1.1E+02 | mg/kg | 3.8E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 5.8E-06 |
| | | | Dermal | CADMIUM | 2.3E+00 | mg/kg | 2.5E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 2.0E+00 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 1.1E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 6.0E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 6.3E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.9E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 8.5E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 1.2E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 1.4E-01 | mg/kg | 1.3E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.3E-07 (a) |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **5.9E-06** |
| Soil | Particulates in Air | BWL | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 1.2E-06 | mg/m3 | 1.4E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ANTIMONY | 4.4E-10 | mg/m3 | 5.2E-09 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ARSENIC | 3.6E-08 | mg/m3 | 4.2E-07 | µg/m3 | 4.3E-03 | (µg/m3)-1 | 1.8E-09 |
| | | | Inhalation | CADMIUM | 7.1E-10 | mg/m3 | 8.3E-09 | µg/m3 | 1.8E-03 | (µg/m3)-1 | 1.5E-11 |
| | | | Inhalation | CHROMIUM | 6.2E-10 | mg/m3 | 3.9E-08 | µg/m3 | 8.4E-02 | (µg/m3)-1 | 3.3E-09 (a) |
| | | | Inhalation | COBALT | 3.4E-10 | mg/m3 | 4.0E-09 | µg/m3 | 9.0E-03 | (µg/m3)-1 | 3.6E-11 |
| | | | Inhalation | CYANIDE | 7.9E-06 | mg/m3 | 9.3E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | IRON | 1.9E-06 | mg/m3 | 2.3E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | LEAD | 5.8E-08 | mg/m3 | 6.8E-07 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | THALLIUM | 2.6E-10 | mg/m3 | 3.1E-09 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | VANADIUM | 3.9E-09 | mg/m3 | 4.5E-08 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)PYRENE | 4.2E-11 | mg/m3 | 2.6E-09 | µg/m3 | 6.0E-04 | (µg/m3)-1 | 1.6E-12 (a) |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **5.1E-09** |
| Sediment | Sediment | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.5E+04 | mg/kg | 2.0E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 7.3E+00 | mg/kg | 1.0E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 2.8E+02 | mg/kg | 2.3E-05 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 3.5E-05 |
| | | | Ingestion | CADMIUM | 1.3E+01 | mg/kg | 1.8E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 7.8E+00 | mg/kg | 7.8E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 3.9E-06 (a) |
| | | | Ingestion | COBALT | 1.7E+01 | mg/kg | 2.3E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.8E+02 | mg/kg | 2.4E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
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| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Ingestion | CYANIDE | 1.5E+01 | mg/kg | 2.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 4.2E+04 | mg/kg | 5.8E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.5E+03 | mg/kg | 2.0E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 1.5E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 5.6E+01 | mg/kg | 7.7E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ZINC | 1.1E+03 | mg/kg | 1.5E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 8.0E-02 | mg/kg | 1.1E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 2.2E-08 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 1.4E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.4E-07 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 1.4E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.4E-06 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 2.0E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.0E-07 (a) |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 2.0E-06 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 2.0E-08 (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 2.9E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.9E-07 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 7.5E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 7.5E-08 (a) |
| | | | Ingestion | NAPHTHALENE | 2.8E+00 | mg/kg | 3.9E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **VOCs** | | | | | | | |
| | | | Ingestion | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | 2.1E-08 | mg/kg-d | 4.6E-02 | (mg/kg-d)-1 | 9.6E-10 (a) |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **4.1E-05** |
| Sediment | Sediment | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.5E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 7.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 2.8E+02 | mg/kg | 2.8E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 4.2E-06 |
| | | | Dermal | CADMIUM | 1.3E+01 | mg/kg | 4.4E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 7.8E+00 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 1.7E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.8E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 1.5E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 4.2E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.5E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 5.6E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ZINC | 1.1E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 8.0E-02 | mg/kg | 3.7E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 7.3E-09 |

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|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 3.7E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.7E-08 (a) |
| | | | Dermal | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 3.8E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.8E-07 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 5.6E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 5.6E-08 (a) |
| | | | Dermal | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 5.4E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 5.4E-09 (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 7.8E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 7.8E-08 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 2.0E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.0E-08 (a) |
| | | | Dermal | NAPHTHALENE | 2.8E+00 | mg/kg | 1.2E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **VOCs** | | | | | | | |
| | | | Dermal | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | NA | mg/kg-d | 4.6E-02 | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **4.8E-06** |
| Surface Water | Surface Water | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.3E+00 | mg/L | 2.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 1.2E-03 | mg/L | 1.9E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 3.1E-02 | mg/L | 5.0E-08 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 7.5E-08 |
| | | | Dermal | CADMIUM | 6.2E-04 | mg/L | 1.0E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 4.5E-03 | mg/L | 4.7E-08 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 9.5E-07 (a) |
| | | | Dermal | COBALT | 1.0E-03 | mg/L | 6.6E-10 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 2.0E-03 | mg/L | 3.3E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 6.5E+00 | mg/L | 1.1E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.6E-02 | mg/L | 4.2E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 7.0E-02 | mg/L | 1.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 1.2E-03 | mg/L | 2.0E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 2.5E-03 | mg/L | 4.0E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 3.4E-05 | mg/L | 1.2E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.2E-06 (a) |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **2E-06** |
| **Exposure Point Total (BWL)** | | | | | | | | | | | **1E-04** |
| Soil | Soil (0-2 ft bgs) | HC | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 9.2E+03 | mg/kg | 4.3E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 5.3E+00 | mg/kg | 2.5E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 5.0E+02 | mg/kg | 1.4E-04 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.1E-04 |
| | | | Ingestion | BARIUM | 1.9E+03 | mg/kg | 9.1E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CADMIUM | 2.9E+00 | mg/kg | 1.4E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 3.2E+01 | mg/kg | 1.1E-04 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 5.5E-05 (a) |
| | | | Ingestion | COBALT | 6.3E+00 | mg/kg | 3.0E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.4E+02 | mg/kg | 6.7E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 4.9E+01 | mg/kg | 2.3E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 2.8E+04 | mg/kg | 1.3E-02 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 3.3E+03 | mg/kg | 1.5E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 3.4E+02 | mg/kg | 1.6E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | HC | Ingestion | MERCURY | 7.7E-01 | mg/kg | 3.6E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | NICKEL | 1.4E+01 | mg/kg | 6.4E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 6.6E-01 | mg/kg | 3.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 3.0E+01 | mg/kg | 1.4E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ZINC | 5.3E+02 | mg/kg | 2.5E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 5.5E-02 | mg/kg | 2.6E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 5.2E-08 |
| | | | Ingestion | AROCLOR-1260 | 1.7E-01 | mg/kg | 7.7E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.5E-07 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.6E+00 | mg/kg | 5.5E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 5.5E-07 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 1.8E+00 | mg/kg | 6.0E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 6.0E-06 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 6.9E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 6.9E-07 (a) |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.8E+00 | mg/kg | 6.3E-06 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 6.3E-08 (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 3.0E-01 | mg/kg | 1.0E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.0E-06 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.7E-01 | mg/kg | 2.6E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.6E-07 (a) |
| | | | Ingestion | NAPHTHALENE | 2.7E-01 | mg/kg | 1.2E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **2.7E-04** |
| Soil | Soil (0-2 ft bgs) | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 9.2E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 5.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 5.0E+02 | mg/kg | 1.7E-05 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.5E-05 |
| | | | Dermal | BARIUM | 1.9E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CADMIUM | 2.9E+00 | mg/kg | 3.2E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 3.2E+01 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 6.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.4E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.9E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 2.8E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 3.3E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 3.4E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MERCURY | 7.7E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | NICKEL | 1.4E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 6.6E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 3.0E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ZINC | 5.3E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 5.5E-02 | mg/kg | 8.6E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.7E-08 |
| | | | Dermal | AROCLOR-1260 | 1.7E-01 | mg/kg | 2.6E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 5.1E-08 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | HC | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.6E+00 | mg/kg | 1.5E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.5E-07 (a) |
| | | | Dermal | BENZO(A)PYRENE | 1.8E+00 | mg/kg | 1.6E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.6E-06 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 1.9E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.9E-07 (a) |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.8E+00 | mg/kg | 1.7E-06 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 1.7E-08 (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 3.0E-01 | mg/kg | 2.8E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.8E-07 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.7E-01 | mg/kg | 7.2E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 7.2E-08 (a) |
| | | | Dermal | NAPHTHALENE | 2.7E-01 | mg/kg | 3.9E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **2.7E-05** |
| Soil | Particulates in Air | HC | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 2.8E-06 | mg/m3 | 3.3E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ANTIMONY | 1.6E-09 | mg/m3 | 1.9E-08 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ARSENIC | 1.5E-07 | mg/m3 | 1.8E-06 | µg/m3 | 4.3E-03 | (µg/m3)-1 | 7.8E-09 |
| | | | Inhalation | BARIUM | 6.0E-07 | mg/m3 | 7.1E-06 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | CADMIUM | 9.0E-10 | mg/m3 | 1.1E-08 | µg/m3 | 1.8E-03 | (µg/m3)-1 | 1.9E-11 |
| | | | Inhalation | CHROMIUM | 9.9E-09 | mg/m3 | 6.2E-07 | µg/m3 | 8.4E-02 | (µg/m3)-1 | 5.2E-08 (a) |
| | | | Inhalation | COBALT | 1.9E-09 | mg/m3 | 2.3E-08 | µg/m3 | 9.0E-03 | (µg/m3)-1 | 2.1E-10 |
| | | | Inhalation | COPPER | 4.4E-08 | mg/m3 | 5.2E-07 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | CYANIDE | 6.5E-04 | mg/m3 | 7.6E-03 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | IRON | 8.5E-06 | mg/m3 | 1.0E-04 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | LEAD | 1.0E-06 | mg/m3 | 1.2E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | MANGANESE | 1.0E-07 | mg/m3 | 1.2E-06 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | MERCURY | 2.4E-10 | mg/m3 | 2.8E-09 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | NICKEL | 4.2E-09 | mg/m3 | 5.0E-08 | µg/m3 | 2.6E-04 | (µg/m3)-1 | 1.3E-11 |
| | | | Inhalation | THALLIUM | 2.0E-10 | mg/m3 | 2.4E-09 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | VANADIUM | 9.4E-09 | mg/m3 | 1.1E-07 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ZINC | 1.6E-07 | mg/m3 | 1.9E-06 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | **PEST/PCB** | | | | | | | |
| | | | Inhalation | AROCLOR-1254 | 5.1E-08 | mg/m3 | 6.0E-07 | µg/m3 | 5.7E-04 | (µg/m3)-1 | 3.4E-10 |
| | | | Inhalation | AROCLOR-1260 | 9.8E-08 | mg/m3 | 1.2E-06 | µg/m3 | 5.7E-04 | (µg/m3)-1 | 6.6E-10 |
| | | | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)ANTHRACENE | 2.8E-07 | mg/m3 | 1.8E-05 | µg/m3 | 6.0E-05 | (µg/m3)-1 | 1.1E-09 (a) |
| | | | Inhalation | BENZO(A)PYRENE | 5.4E-10 | mg/m3 | 3.4E-08 | µg/m3 | 6.0E-04 | (µg/m3)-1 | 2.0E-11 (a) |
| | | | Inhalation | BENZO(B)FLUORANTHENE | 6.2E-10 | mg/m3 | 3.9E-08 | µg/m3 | 6.0E-05 | (µg/m3)-1 | 2.3E-12 (a) |
| | | | Inhalation | BENZO(K)FLUORANTHENE | 5.7E-10 | mg/m3 | 3.6E-08 | µg/m3 | 6.0E-06 | (µg/m3)-1 | 2.1E-13 (a) |
| | | | Inhalation | DIBENZO(A,H)ANTHRACENE | 9.2E-11 | mg/m3 | 5.7E-09 | µg/m3 | 6.0E-04 | (µg/m3)-1 | 3.4E-12 (a) |
| | | | Inhalation | INDENO(1,2,3-CD)PYRENE | 2.4E-10 | mg/m3 | 1.5E-08 | µg/m3 | 6.0E-05 | (µg/m3)-1 | 9.0E-13 (a) |
| | | | Inhalation | NAPHTHALENE | 4.5E-06 | mg/m3 | 5.3E-05 | µg/m3 | 3.4E-05 | (µg/m3)-1 | 1.8E-09 |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **6.4E-08** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | HC | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 8.3E+03 | mg/kg | 1.1E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 2.5E+00 | mg/kg | 3.4E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 3.9E+02 | mg/kg | 3.2E-05 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 4.8E-05 |
| | | | Ingestion | BARIUM | 1.0E+03 | mg/kg | 1.4E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CADMIUM | 4.5E+00 | mg/kg | 6.2E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 2.2E+01 | mg/kg | 2.2E-05 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 1.1E-05 (a) |
| | | | Ingestion | COBALT | 5.0E+00 | mg/kg | 6.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.7E+02 | mg/kg | 2.3E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 4.8E+01 | mg/kg | 6.6E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 1.7E+04 | mg/kg | 2.4E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 2.9E+03 | mg/kg | 3.9E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 8.1E+01 | mg/kg | 1.1E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | NICKEL | 3.3E+01 | mg/kg | 4.6E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 1.6E+00 | mg/kg | 2.3E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 2.4E+01 | mg/kg | 3.4E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ZINC | 4.9E+02 | mg/kg | 6.7E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.4E-01 | mg/kg | 1.9E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 3.7E-08 |
| | | | Ingestion | AROCLOR-1260 | 5.8E-02 | mg/kg | 8.0E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.6E-08 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 7.1E-01 | mg/kg | 7.1E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 7.1E-08 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 7.0E-01 | mg/kg | 7.0E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 7.0E-07 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 9.5E-01 | mg/kg | 9.5E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 9.5E-08 (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.9E-01 | mg/kg | 1.9E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.9E-07 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 3.9E-01 | mg/kg | 3.9E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.9E-08 (a) |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **6.0E-05** |
| Sediment | Sediment | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 8.3E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 2.5E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 3.9E+02 | mg/kg | 3.8E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 5.7E-06 |
| | | | Dermal | BARIUM | 1.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CADMIUM | 4.5E+00 | mg/kg | 1.5E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 2.2E+01 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 5.0E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.7E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.8E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 1.7E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.9E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 8.1E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | NICKEL | 3.3E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | HC | Dermal | THALLIUM | 1.6E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 2.4E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ZINC | 4.9E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.4E-01 | mg/kg | 6.2E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.2E-08 |
| | | | Dermal | AROCLOR-1260 | 5.8E-02 | mg/kg | 2.6E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 5.3E-09 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 7.1E-01 | mg/kg | 2.0E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.0E-08 (a) |
| | | | Dermal | BENZO(A)PYRENE | 7.0E-01 | mg/kg | 1.9E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.9E-07 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 9.5E-01 | mg/kg | 2.6E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.6E-08 (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.9E-01 | mg/kg | 5.2E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 5.2E-08 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 3.9E-01 | mg/kg | 1.1E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.1E-08 (a) |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **6.0E-06** |
| Surface Water | Surface Water | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 6.2E+00 | mg/L | 1.0E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 3.4E-03 | mg/L | 5.5E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 1.1E-01 | mg/L | 1.8E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.6E-07 |
| | | | Dermal | BARIUM | 4.5E-01 | mg/L | 7.4E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CADMIUM | 2.5E-03 | mg/L | 4.1E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 1.2E-01 | mg/L | 1.2E-06 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 2.5E-05 (a) |
| | | | Dermal | COBALT | 2.7E-03 | mg/L | 1.8E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 2.8E-02 | mg/L | 4.6E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 8.6E-03 | mg/L | 1.4E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 1.4E+01 | mg/L | 2.2E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.4E-01 | mg/L | 3.9E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.6E-01 | mg/L | 2.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MERCURY | 2.0E-04 | mg/L | 3.3E-10 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 5.4E-03 | mg/L | 8.8E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 5.1E-03 | mg/L | 8.3E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ZINC | 4.8E-01 | mg/L | 4.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **2E-05** |
| **Exposure Point Total (HC)** | | | | | | | | | | | **4E-04** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 4.6E+03 | mg/kg | 2.2E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 3.6E+00 | mg/kg | 1.7E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 8.4E+00 | mg/kg | 2.4E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 3.6E-06 |
| | | | Ingestion | CHROMIUM | 9.2E-01 | mg/kg | 3.2E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 1.6E-06 (a) |
| | | | Ingestion | COBALT | 8.7E-01 | mg/kg | 4.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 3.7E-01 | mg/kg | 1.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 7.8E+03 | mg/kg | 3.7E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 2.1E+02 | mg/kg | 1.0E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 4.4E-01 | mg/kg | 2.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 1.3E-01 | mg/kg | 4.3E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 4.3E-07 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.6E-01 | mg/kg | 8.8E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 8.8E-08 (a) |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **5.7E-06** |
| Soil | Soil (0-2 ft bgs) | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 4.6E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 3.6E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 8.4E+00 | mg/kg | 2.8E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 4.2E-07 |
| | | | Dermal | CHROMIUM | 9.2E-01 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 8.7E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 3.7E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 7.8E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 4.4E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 1.3E-01 | mg/kg | 1.2E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.2E-07 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.6E-01 | mg/kg | 2.4E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.4E-08 (a) |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **5.7E-07** |
| Soil | Particulates in Air | KWL | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 1.4E-06 | mg/m3 | 1.7E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ANTIMONY | 1.1E-09 | mg/m3 | 1.3E-08 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ARSENIC | 2.6E-09 | mg/m3 | 3.1E-08 | µg/m3 | 4.3E-03 | (µg/m3)-1 | 1.3E-10 |
| | | | Inhalation | CHROMIUM | 2.9E-10 | mg/m3 | 1.8E-08 | µg/m3 | 8.4E-02 | (µg/m3)-1 | 1.5E-09 (a) |
| | | | Inhalation | COBALT | 2.7E-10 | mg/m3 | 3.2E-09 | µg/m3 | 9.0E-03 | (µg/m3)-1 | 2.8E-11 |
| | | | Inhalation | CYANIDE | 4.9E-06 | mg/m3 | 5.8E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | IRON | 2.4E-06 | mg/m3 | 2.8E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | LEAD | 6.6E-08 | mg/m3 | 7.7E-07 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | THALLIUM | 1.4E-10 | mg/m3 | 1.6E-09 | µg/m3 | NA | (µg/m3)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Particulates in Air | KWL | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)PYRENE | 3.9E-11 | mg/m3 | 2.5E-09 | µg/m3 | 6.0E-04 | (µg/m3)-1 | 1.5E-12 (a) |
| | | | Inhalation | BENZO(B)FLUORANTHENE | 7.9E-11 | mg/m3 | 5.0E-09 | µg/m3 | 6.0E-05 | (µg/m3)-1 | 3.0E-13 (a) |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **1.7E-09** |
| Sediment | Sediment | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.6E+04 | mg/kg | 2.2E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 2.0E+00 | mg/kg | 2.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 8.8E+01 | mg/kg | 7.3E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.1E-05 |
| | | | Ingestion | CADMIUM | 7.7E+00 | mg/kg | 1.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 8.6E+00 | mg/kg | 8.7E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 4.3E-06 (a) |
| | | | Ingestion | COBALT | 8.6E+00 | mg/kg | 1.2E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 2.1E+02 | mg/kg | 2.9E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 4.1E+00 | mg/kg | 5.6E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 2.7E+04 | mg/kg | 3.7E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.0E+03 | mg/kg | 1.4E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.4E+02 | mg/kg | 2.0E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | NICKEL | 3.7E+01 | mg/kg | 5.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 4.7E-01 | mg/kg | 6.4E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 2.6E+01 | mg/kg | 3.6E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.6E-01 | mg/kg | 2.3E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 4.5E-08 |
| Sediment | Sediment | KWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 1.1E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.1E-07 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 1.1E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.1E-06 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 1.4E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.4E-07 (a) |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 1.2E-06 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 1.2E-08 (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 1.6E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.6E-07 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 4.2E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.2E-08 (a) |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **1.7E-05** |
| | | | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.6E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 2.0E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 8.8E+01 | mg/kg | 8.6E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.3E-06 |
| | | | Dermal | CADMIUM | 7.7E+00 | mg/kg | 2.5E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 8.6E+00 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 8.6E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 2.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.1E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 2.7E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.4E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | KWL | Dermal | NICKEL | 3.7E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 4.7E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 2.6E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.6E-01 | mg/kg | 7.5E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.5E-08 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 3.1E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.1E-08 (a) |
| | | | Dermal | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 2.9E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.9E-07 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 3.8E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.8E-08 (a) |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 3.3E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 3.3E-09 (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 4.5E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 4.5E-08 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 1.1E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.1E-08 (a) |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **1.7E-06** |
| Surface Water | Surface Water | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.4E+00 | mg/L | 2.2E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 3.7E-03 | mg/L | 6.0E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 1.7E-02 | mg/L | 2.7E-08 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 4.1E-08 |
| | | | Dermal | CHROMIUM | 5.3E-03 | mg/L | 5.6E-08 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 1.1E-06 (a) |
| | | | Dermal | COBALT | 1.6E-03 | mg/L | 1.0E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 1.8E-03 | mg/L | 2.9E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 3.6E+00 | mg/L | 5.9E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.9E-02 | mg/L | 4.8E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 8.0E-02 | mg/L | 1.3E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 5.8E-03 | mg/L | 9.5E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1E-06** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **3E-05** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

(a) The mutagen risks were calculated for COPCs identified as having a mutagenic mode of action.

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |

**Ingestion - Soil**

$$\text{Intake Factor (IF)} = \frac{IR \times FS \times EF \times ED \times CF \times ADAF}{BW \times AT} =$$

| | | Non-mutagens | Mutagens[a] | |
|---|---|---|---|---|
| | | 4.7E-07 | 2.6E-06 | 8.1E-07 |
| | | (Child) | (0-2 years) | (2-6 years) |
| IR | Ingestion Rate (mg/day) | 200 | 200 | 200 |
| FS | Fraction from Contaminated Source | 1 | 1 | 1 |
| EF | Soil Ingestion Exposure Frequency (days/year) | 150 | 150 | 150 |
| ED | Soil Ingestion Exposure Duration (years) | 6 | 2 | 4 |
| CF | Conversion Factor (kg/mg) | 0.000001 | 0.000001 | 0.000001 |
| BW | Body Weight (kg) | 15 | 9 | 17 |
| AT | Averaging Time (days) | 25,550 | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 10 | 3 |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{soil} * IF * B$

(B) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Dermal - Soil**

$$\text{Intake Factor (IF)} = \frac{SA \times AF \times EF \times ED \times CF \times ADAF}{BW \times AT} =$$

| | | Non-mutagens | Mutagens[a] | |
|---|---|---|---|---|
| | | 1.1E-06 | 5.1E-06 | 2.1E-06 |
| | | (Child) | (0-2 years) | (2-6 years) |
| SA | Surface Area Exposed to Soil ($cm^2$/day) | 2,373 | 1,954 | 2,591 |
| AF | Soil Skin Adherence Factor ($mg/cm^2$) | 0.2 | 0.2 | 0.2 |
| EF | Soil Dermal Exposure Frequency (days/year) | 150 | 150 | 150 |
| ED | Soil Dermal Exposure Duration (years) | 6 | 2 | 4 |
| CF | Conversion Factor (kg/mg) | 0.000001 | 0.000001 | 0.000001 |
| BW | Body Weight (kg) | 15 | 9 | 17 |
| AT | Averaging Time (days) | 25,550 | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 10 | 3 |

$Intake_{derm}(mg/kg{\cdot}d) = EPC_{soil} * IF * ABS$

(ABS) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |

**Inhalation - Soil**

$$\text{Intake Factor (IF)} = \frac{EF \times ED \times ET \times CF1 \times CF2 \times ADAF}{AT} =$$

| | | Non-mutagens | Mutagens[a] | |
|---|---|---|---|---|
| | | 1.2E+01 (Child) | 3.9E+01 (0-2 years) | 2.3E+01 (2-6 years) |
| EF | Soil Exposure Frequency (days/year) | 150 | 150 | 150 |
| ED | Soil Exposure Duration (years) | 6 | 2 | 4 |
| ET | Soil Exposure Time (hours/day) | 8 | 8 | 8 |
| CF1 | Conversion Factor (days/hours) | 0.042 | 0.042 | 0.042 |
| CF2 | Conversion Factor (µg/mg) | 1,000 | 1,000 | 1,000 |
| AT | Averaging Time (days) | 25,550 | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 10 | 3 |

$EPC_{air} = EPC_{soil}$ x [1/Volatilization Factor (VF) + 1/Particulate Emissions Factor (PEF)]

Exposure = $EPC_{air}$ x IF

Cancer Risk = Exposure x Inhalation Unit Risk (IUR)

**Ingestion - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{IR \times FS \times EF \times ED \times CF \times ADAF}{BW \times AT} =$$

| | | Non-mutagens | Mutagens[a] | |
|---|---|---|---|---|
| | | 1.4E-07 (Child) | 7.7E-07 (0-2 years) | 2.4E-07 (2-6 years) |
| IR | Ingestion Rate (mg/day) | 200 | 200 | 200 |
| FS | Fraction from Contaminated Source | 1 | 1 | 1 |
| EF | Sediment Ingestion Exposure Frequency (days/year) | 44 | 44 | 44 |
| ED | Sediment Ingestion Exposure Duration (years) | 6 | 2 | 4 |
| CF | Conversion Factor (kg/mg) | 0.000001 | 0.000001 | 0.000001 |
| BW | Body Weight (kg) | 15 | 9 | 17 |
| AT | Averaging Time (days) | 25,550 | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 10 | 3 |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{sediment} * IF * B$

(B) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC Value | EPC Units | Cancer Risk Calculations: Intake/Exposure Value | Intake/Exposure Units | CSF/Unit Risk Value | CSF/Unit Risk Units | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|

**Dermal - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{SA \times AF \times EF \times ED \times CF \times ADAF}{BW \times AT} =$$

| | | Non-mutagens | Mutagens[a] | |
|---|---|---|---|---|
| | | 3.3E-07 | 1.5E-06 | 6.2E-07 |
| | | (Child) | (0-2 years) | (2-6 years) |
| SA | Surface Area Exposed to Sediment (cm²/day) | 2,373 | 1,954 | 2,591 |
| AF | Sediment Skin Adherence Factor (mg/cm²) | 0.2 | 0.2 | 0.2 |
| EF | Sediment Dermal Exposure Frequency (days/year) | 44 | 44 | 44 |
| ED | Sediment Dermal Exposure Duration (years) | 6 | 2 | 4 |
| CF | Conversion Factor (kg/mg) | 0.000001 | 0.000001 | 0.000001 |
| BW | Body Weight (kg) | 15 | 9 | 17 |
| AT | Averaging Time (days) | 25,550 | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 10 | 3 |

$Intake_{derm}(mg/kg{\cdot}d) = EPC_{sediment} * IF * ABS$

(ABS) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Dermal - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{SA \times EV \times EF \times ED \times ADAF}{BW \times AT} =$$

| | | Non-mutagens | Mutagens[a] | |
|---|---|---|---|---|
| | | 1.6E+00 | 7.5E+00 | 3.1E+00 |
| | | (Child) | (0-2 years) | (2-6 years) |
| SA | Surface Area Exposed to Surface Water (cm²) | 2,373 | 1,954 | 2,591 |
| EF | Surface Water Dermal Exposure Frequency (days/year) | 44 | 44 | 44 |
| ED | Surface Water Dermal Exposure Duration (years) | 6 | 2 | 4 |
| EV | Events per Day (events/day) | 1 | 1 | 1 |
| BW | Body Weight (kg) | 15 | 9 | 17 |
| AT | Averaging Time (days) | 25,550 | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 10 | 3 |

$Intake_{derm}(mg/kg{\cdot}d)$ = IF x Absorbed Dose per Event ($DA_{event}$)

($DA_{event}$) presented in Table 4.6

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Calculation of Lifetime Average Daily Dose for Recreator - Trichloroethylene in Sediment**

$Intake\ Factor_{ing} = [(CAF_o*(IF_{child}+IF_{adult}))+(MAF_o*(IF_{0-2}+IF_{2-6}+IF_{6-16}+IF_{16-26}))]$

| | | |
|---|---|---|
| Age-dependent Adjustment factor for carcinogens - oral slope factor | $CAF_o$ | 0.804 |
| Age-dependent Adjustment factor for mutagens - oral slope factor | $MAF_o$ | 0.202 |

$Intake\ Factor_{derm} = [(CAF_o*(IF_{child}+IF_{adult}))+MAF_o*(IF_{0-2}+IF_{2-6}+IF_{6-16}+IF_{16-26}))]$

**Table 7.4**
**Calculation of Chemical Cancer Risks for Swimmer**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.0E+03 | mg/kg | 4.0E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 2.3E+00 | mg/kg | 3.0E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 9.8E+00 | mg/kg | 7.9E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.2E-06 |
| | | | Ingestion | CHROMIUM | 8.0E-01 | mg/kg | 1.1E-07 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 5.3E-08 |
| | | | Ingestion | COBALT | 6.2E+00 | mg/kg | 8.2E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.0E+02 | mg/kg | 1.4E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 2.7E+00 | mg/kg | 3.6E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 8.0E+03 | mg/kg | 1.1E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.7E+02 | mg/kg | 2.3E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 1.5E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 8.6E-01 | mg/kg | 1.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 6.5E-02 | mg/kg | 8.7E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.7E-08 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 2.6E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.6E-07 |
| | | | Ingestion | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 2.0E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.0E-06 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 3.9E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.9E-07 |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 8.4E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 8.4E-09 |
| | | | Ingestion | CHRYSENE | 3.0E+01 | mg/kg | 4.0E-06 | mg/kg-d | 1.0E-03 | (mg/kg-d)-1 | 4.0E-09 |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 2.0E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.0E-07 |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 5.4E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 5.4E-08 |
| | | | Ingestion | **TICs** | | | | | | | |
| | | | Ingestion | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 1.6E-06 | mg/kg-d | 1.2E+00 | (mg/kg-d)-1 | 1.9E-06 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **6.1E-06** |
| Sediment | Sediment | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 2.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 9.8E+00 | mg/kg | 4.8E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 7.1E-07 |
| | | | Dermal | CHROMIUM | 8.0E-01 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 6.2E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.0E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 2.7E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 8.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.7E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 8.6E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 6.5E-02 | mg/kg | 1.5E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 2.9E-08 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 4.1E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.1E-07 |
| | | | Dermal | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 3.1E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.1E-06 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 6.2E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 6.2E-07 |
| | | | Dermal | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 1.3E-06 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 1.3E-08 |
| | | | Dermal | CHRYSENE | 3.0E+01 | mg/kg | 6.2E-06 | mg/kg-d | 1.0E-03 | (mg/kg-d)-1 | 6.2E-09 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 3.1E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.1E-07 |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 8.5E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 8.5E-08 |
| | | | Dermal | **TICs** | | | | | | | |
| | | | Dermal | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 2.5E-06 | mg/kg-d | 1.2E+00 | (mg/kg-d)-1 | 3.0E-06 |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **8.3E-06** |
| Surface Water | Surface Water | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ARSENIC | 7.8E-03 | mg/L | 1.9E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.8E-06 |
| | | | Ingestion | CHROMIUM | 2.6E-03 | mg/L | 6.1E-07 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 3.0E-07 |
| | | | Ingestion | COBALT | 2.1E-03 | mg/L | 5.0E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 4.4E-03 | mg/L | 1.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 1.1E+01 | mg/L | 2.7E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 9.5E-01 | mg/L | 2.2E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 1.6E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.6E-09 |
| | | | Ingestion | BENZO(A)PYRENE | 2.0E-04 | mg/L | 4.7E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 4.7E-08 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 3.2E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.2E-09 |
| | | | Ingestion | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 4.2E-07 | mg/kg-d | 1.4E-02 | (mg/kg-d)-1 | 5.9E-09 |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 1.6E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.6E-08 |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 2.1E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.1E-09 |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **3E-06** |
| Surface Water | Surface Water | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ARSENIC | 7.8E-03 | mg/L | 4.7E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 7.0E-07 |
| | | | Dermal | CHROMIUM | 2.6E-03 | mg/L | 1.5E-07 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 3.1E-06 |
| | | | Dermal | COBALT | 2.1E-03 | mg/L | 5.1E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.4E-03 | mg/L | 2.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 1.1E+01 | mg/L | 6.8E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 9.5E-01 | mg/L | 5.7E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | SL | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 5.8E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 5.8E-07 |
| | | | Dermal | BENZO(A)PYRENE | 2.0E-04 | mg/L | 2.6E-05 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.6E-05 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 1.0E-05 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.0E-06 |
| | | | Dermal | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 7.2E-04 | mg/kg-d | 1.4E-02 | (mg/kg-d)-1 | 1.0E-05 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 8.4E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 8.4E-06 |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 1.4E-05 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.4E-06 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **5E-05** |
| **Exposure Point Total (SL)** | | | | | | | | | | | **7E-05** |
| Sediment | Sediment | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.5E+04 | mg/kg | 2.0E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 7.3E+00 | mg/kg | 9.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 2.8E+02 | mg/kg | 2.3E-05 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 3.4E-05 |
| | | | Ingestion | CADMIUM | 1.3E+01 | mg/kg | 1.8E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 7.8E+00 | mg/kg | 1.0E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 5.2E-07 |
| | | | Ingestion | COBALT | 1.7E+01 | mg/kg | 2.2E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.8E+02 | mg/kg | 2.3E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 1.5E+01 | mg/kg | 2.0E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 4.2E+04 | mg/kg | 5.6E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.5E+03 | mg/kg | 2.0E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 1.5E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 5.6E+01 | mg/kg | 7.5E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ZINC | 1.1E+03 | mg/kg | 1.5E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 8.0E-02 | mg/kg | 1.1E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 2.1E-08 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 1.8E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.8E-08 |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 1.8E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.8E-07 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 2.7E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.7E-08 |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 2.6E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 2.6E-09 |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 3.8E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.8E-08 |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 1.0E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.0E-08 |
| | | | Ingestion | NAPHTHALENE | 2.8E+00 | mg/kg | 3.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **VOCs** | | | | | | | |
| | | | Ingestion | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | 8.9E-09 | mg/kg-d | 4.6E-02 | (mg/kg-d)-1 | 4.1E-10 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **3.5E-05** |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.5E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 7.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 2.8E+02 | mg/kg | 1.4E-05 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.1E-05 |
| | | | Dermal | CADMIUM | 1.3E+01 | mg/kg | 2.2E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 7.8E+00 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 1.7E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.8E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 1.5E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 4.2E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.5E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 5.6E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ZINC | 1.1E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 8.0E-02 | mg/kg | 1.8E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 3.6E-08 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 2.8E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.8E-08 |
| | | | Dermal | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 2.9E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.9E-07 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 4.2E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.2E-08 |
| | | | Dermal | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 4.1E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 4.1E-09 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 6.0E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 6.0E-08 |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 1.6E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.6E-08 |
| | | | Dermal | NAPHTHALENE | 2.8E+00 | mg/kg | 6.0E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **VOCs** | | | | | | | |
| | | | Dermal | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | NA | mg/kg-d | 4.6E-02 | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **2.1E-05** |
| Surface Water | Surface Water | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.3E+00 | mg/L | 3.0E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 1.2E-03 | mg/L | 2.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 3.1E-02 | mg/L | 7.3E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.1E-05 |
| | | | Ingestion | CADMIUM | 6.2E-04 | mg/L | 1.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 4.5E-03 | mg/L | 1.1E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 5.3E-07 |
| | | | Ingestion | COBALT | 1.0E-03 | mg/L | 2.4E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 2.0E-03 | mg/L | 4.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 6.5E+00 | mg/L | 1.5E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 2.6E-02 | mg/L | 6.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 7.0E-02 | mg/L | 1.7E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 1.2E-03 | mg/L | 2.9E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 2.5E-03 | mg/L | 5.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | BWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 3.4E-05 | mg/L | 8.1E-09 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 8.1E-09 |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **1E-05** |
| Surface Water | Surface Water | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.3E+00 | mg/L | 7.7E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 1.2E-03 | mg/L | 6.9E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 3.1E-02 | mg/L | 1.8E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.7E-06 |
| | | | Dermal | CADMIUM | 6.2E-04 | mg/L | 3.7E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 4.5E-03 | mg/L | 2.7E-07 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 5.4E-06 |
| | | | Dermal | COBALT | 1.0E-03 | mg/L | 2.4E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 2.0E-03 | mg/L | 1.2E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 6.5E+00 | mg/L | 3.9E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.6E-02 | mg/L | 1.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 7.0E-02 | mg/L | 4.2E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 1.2E-03 | mg/L | 7.4E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 2.5E-03 | mg/L | 1.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 3.4E-05 | mg/L | 4.4E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 4.4E-06 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1E-05** |
| **Exposure Point Total (BWL)** | | | | | | | | | | | **8E-05** |
| Sediment | Sediment | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.6E+04 | mg/kg | 2.2E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 2.0E+00 | mg/kg | 2.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 8.8E+01 | mg/kg | 7.1E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.1E-05 |
| | | | Ingestion | CADMIUM | 7.7E+00 | mg/kg | 1.0E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 8.6E+00 | mg/kg | 1.2E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 5.8E-07 |
| | | | Ingestion | COBALT | 8.6E+00 | mg/kg | 1.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 2.1E+02 | mg/kg | 2.8E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 4.1E+00 | mg/kg | 5.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 2.7E+04 | mg/kg | 3.5E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.0E+03 | mg/kg | 1.4E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.4E+02 | mg/kg | 1.9E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | NICKEL | 3.7E+01 | mg/kg | 4.9E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 4.7E-01 | mg/kg | 6.2E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 2.6E+01 | mg/kg | 3.5E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.6E-01 | mg/kg | 2.2E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 4.4E-08 |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | KWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 1.5E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.5E-08 |
| | | | Ingestion | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 1.4E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.4E-07 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 1.8E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.8E-08 |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 1.6E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 1.6E-09 |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 2.2E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.2E-08 |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 5.5E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 5.5E-09 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **1.1E-05** |
| Sediment | Sediment | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.6E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 2.0E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 8.8E+01 | mg/kg | 4.3E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 6.4E-06 |
| | | | Dermal | CADMIUM | 7.7E+00 | mg/kg | 1.2E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 8.6E+00 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 8.6E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 2.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.1E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 2.7E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.4E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | NICKEL | 3.7E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 4.7E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 2.6E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.6E-01 | mg/kg | 3.7E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 7.4E-08 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 2.4E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.4E-08 |
| | | | Dermal | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 2.2E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.2E-07 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 2.9E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.9E-08 |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 2.5E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 2.5E-09 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 3.4E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.4E-08 |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 8.7E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 8.7E-09 |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **6.8E-06** |
| Surface Water | Surface Water | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.4E+00 | mg/L | 3.3E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 3.7E-03 | mg/L | 8.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 1.7E-02 | mg/L | 4.0E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 5.9E-06 |
| | | | Ingestion | CHROMIUM | 5.3E-03 | mg/L | 1.3E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 6.3E-07 |
| | | | Ingestion | COBALT | 1.6E-03 | mg/L | 3.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | KWL | Ingestion | CYANIDE | 1.8E-03 | mg/L | 4.2E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 3.6E+00 | mg/L | 8.5E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 2.9E-02 | mg/L | 7.0E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 8.0E-02 | mg/L | 1.9E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 5.8E-03 | mg/L | 1.4E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **7E-06** |
| Surface Water | Surface Water | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.4E+00 | mg/L | 8.2E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 3.7E-03 | mg/L | 2.2E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 1.7E-02 | mg/L | 1.0E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.5E-06 |
| | | | Dermal | CHROMIUM | 5.3E-03 | mg/L | 3.2E-07 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 6.4E-06 |
| | | | Dermal | COBALT | 1.6E-03 | mg/L | 3.8E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 1.8E-03 | mg/L | 1.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 3.6E+00 | mg/L | 2.1E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.9E-02 | mg/L | 1.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 8.0E-02 | mg/L | 4.8E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 5.8E-03 | mg/L | 3.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **8E-06** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **3E-05** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

**Ingestion - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{\text{IR} \times \text{FS} \times \text{EF} \times \text{ED} \times \text{CF}}{\text{BW} \times \text{AT}} = 1.3\text{E-}07 \text{ (Adult)}$$

| | | |
|---|---|---|
| IR | Ingestion Rate (mg/day) | 100 |
| FS | Fraction from Contaminated Source | 1 |
| EF | Sediment Ingestion Exposure Frequency (days/year) | 105 |
| ED | Sediment Ingestion Exposure Duration (years) | 26 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 80 |
| AT | Averaging Time (days) | 25,550 |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{sediment} * IF * B$

(B) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |

**Dermal - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{SA \times AF \times EF \times ED \times CF}{BW \times AT}$$

| = | 1.6E-06 (Adult) |
|---|---|

| | | |
|---|---|---|
| SA | Surface Area Exposed to Sediment ($cm^2$/day) | 6,032 |
| AF | Sediment Skin Adherence Factor ($mg/cm^2$) | 0.2 |
| EF | Sediment Dermal Exposure Frequency (days/year) | 105 |
| ED | Sediment Dermal Exposure Duration (years) | 26 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 80 |
| AT | Averaging Time (days) | 25,550 |

$Intake_{derm}(mg/kg{\cdot}d) = EPC_{sediment} * IF * ABS$

(ABS) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Ingestion - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{IR \times FR \times ET \times EF \times ED}{BW \times AT}$$

| = | 2.4E-04 (Adult) |
|---|---|

| | | |
|---|---|---|
| IR | Ingestion Rate - Surface Water (L/hour) | 0.071 |
| FS | Fraction from Contaminated Source | 1 |
| ET | Surface Water Exposure Time (hours/day) | 2.5 |
| EF | Surface Water Ingestion Exposure Frequency (days/year) | 105 |
| ED | Surface Water Exposure Duration (years) | 26 |
| BW | Body Weight (kg) | 80 |
| AT | Averaging Time (days) | 25,550 |

$Intake_{ing}(mg/kg\text{-}d) = EPC_{sw} \times IF$

Cancer Risk = Intake x Cancer Slope Factor (CSF)

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |

**Dermal - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{SA \times EV \times EF \times ED}{BW \times AT}$$

| | | |
|---|---|---|
| = | 2.6E+01 | (Adult) |
| SA | Surface Area Exposed to Surface Water ($cm^2$) | 19,652 |
| EF | Surface Water Dermal Exposure Frequency (days/year) | 105 |
| ED | Surface Water Dermal Exposure Duration (years) | 26 |
| EV | Events per Day (events/day) | 1 |
| BW | Body Weight (kg) | 80 |
| AT | Averaging Time (days) | 25,550 |

$Intake_{derm}$(mg/kg·d) = IF x Absorbed Dose per Event ($DA_{event}$)

($DA_{event}$) presented in Table 4.6

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Table 7.5**
**Calculation of Chemical Cancer Risks for Swimmer**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.0E+03 | mg/kg | 2.8E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 2.3E+00 | mg/kg | 2.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 9.8E+00 | mg/kg | 5.5E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 8.2E-07 |
| | | | Ingestion | CHROMIUM | 8.0E-01 | mg/kg | 2.2E-07 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 1.1E-07 (a) |
| | | | Ingestion | COBALT | 6.2E+00 | mg/kg | 5.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.0E+02 | mg/kg | 9.4E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 2.7E+00 | mg/kg | 2.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 8.0E+03 | mg/kg | 7.4E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.7E+02 | mg/kg | 1.6E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 1.0E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 8.6E-01 | mg/kg | 8.0E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 6.5E-02 | mg/kg | 6.0E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.2E-08 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 5.5E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 5.5E-07 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 4.1E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 4.1E-06 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 8.2E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 8.2E-07 (a) |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 1.7E-06 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 1.7E-08 (a) |
| | | | Ingestion | CHRYSENE | 3.0E+01 | mg/kg | 8.3E-06 | mg/kg-d | 1.0E-03 | (mg/kg-d)-1 | 8.3E-09 (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 4.2E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 4.2E-07 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 1.1E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.1E-07 (a) |
| | | | Ingestion | **TICs** | | | | | | | |
| | | | Ingestion | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 1.1E-06 | mg/kg-d | 1.2E+00 | (mg/kg-d)-1 | 1.3E-06 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **8.3E-06** |
| Sediment | Sediment | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 2.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 9.8E+00 | mg/kg | 2.5E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 3.8E-07 |
| | | | Dermal | CHROMIUM | 8.0E-01 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 6.2E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.0E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 2.7E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 8.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.7E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 8.6E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 6.5E-02 | mg/kg | 7.8E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.6E-08 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 6.6E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 6.6E-07 (a) |
| | | | Dermal | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 4.9E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 4.9E-06 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 9.9E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 9.9E-07 (a) |
| | | | Dermal | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 2.1E-06 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 2.1E-08 (a) |
| | | | Dermal | CHRYSENE | 3.0E+01 | mg/kg | 1.0E-05 | mg/kg-d | 1.0E-03 | (mg/kg-d)-1 | 1.0E-08 (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 5.0E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 5.0E-07 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 1.4E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.4E-07 (a) |
| | | | Dermal | **TICs** | | | | | | | |
| | | | Dermal | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 1.3E-06 | mg/kg-d | 1.2E+00 | (mg/kg-d)-1 | 1.6E-06 |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **9.2E-06** |
| Surface Water | Surface Water | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ARSENIC | 7.8E-03 | mg/L | 1.0E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.6E-06 |
| | | | Ingestion | CHROMIUM | 2.6E-03 | mg/L | 1.0E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 5.1E-07 (a) |
| | | | Ingestion | COBALT | 2.1E-03 | mg/L | 2.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 4.4E-03 | mg/L | 5.9E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 1.1E+01 | mg/L | 1.5E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 9.5E-01 | mg/L | 1.3E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 2.7E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.7E-09 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 2.0E-04 | mg/L | 7.9E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 7.9E-08 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 5.3E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 5.3E-09 (a) |
| | | | Ingestion | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 2.4E-07 | mg/kg-d | 1.4E-02 | (mg/kg-d)-1 | 3.3E-09 |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 2.7E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.7E-08 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 3.5E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.5E-09 (a) |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **2E-06** |
| Surface Water | Surface Water | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ARSENIC | 7.8E-03 | mg/L | 1.9E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.9E-07 |
| | | | Dermal | CHROMIUM | 2.6E-03 | mg/L | 1.9E-07 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 3.8E-06 (a) |
| | | | Dermal | COBALT | 2.1E-03 | mg/L | 2.1E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.4E-03 | mg/L | 1.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 1.1E+01 | mg/L | 2.8E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 9.5E-01 | mg/L | 2.3E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | SL | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 7.7E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 7.7E-07 (a) |
| | | | Dermal | BENZO(A)PYRENE | 2.0E-04 | mg/L | 3.4E-05 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.4E-05 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 1.3E-05 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.3E-06 (a) |
| | | | Dermal | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 3.2E-04 | mg/kg-d | 1.4E-02 | (mg/kg-d)-1 | 4.5E-06 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 1.1E-05 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.1E-05 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 1.8E-05 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.8E-06 (a) |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **6E-05** |
| **Exposure Point Total (SL)** | | | | | | | | | | | **8E-05** |
| Sediment | Sediment | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.5E+04 | mg/kg | 1.4E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 7.3E+00 | mg/kg | 6.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 2.8E+02 | mg/kg | 1.6E-05 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.4E-05 |
| | | | Ingestion | CADMIUM | 1.3E+01 | mg/kg | 1.2E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 7.8E+00 | mg/kg | 2.2E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 1.1E-06 (a) |
| | | | Ingestion | COBALT | 1.7E+01 | mg/kg | 1.6E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.8E+02 | mg/kg | 1.6E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 1.5E+01 | mg/kg | 1.4E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 4.2E+04 | mg/kg | 3.9E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.5E+03 | mg/kg | 1.4E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 1.0E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 5.6E+01 | mg/kg | 5.2E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ZINC | 1.1E+03 | mg/kg | 1.0E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 8.0E-02 | mg/kg | 7.4E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.5E-08 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 3.7E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.7E-08 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 3.8E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.8E-07 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 5.6E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 5.6E-08 (a) |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 5.5E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 5.5E-09 (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 7.9E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 7.9E-08 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 2.1E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.1E-08 (a) |
| | | | Ingestion | NAPHTHALENE | 2.8E+00 | mg/kg | 2.6E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **VOCs** | | | | | | | |
| | | | Ingestion | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | 8.7E-09 | mg/kg-d | 4.6E-02 | (mg/kg-d)-1 | 4.0E-10 (a) |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **2.5E-05** |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.5E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 7.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 2.8E+02 | mg/kg | 7.3E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.1E-05 |
| | | | Dermal | CADMIUM | 1.3E+01 | mg/kg | 1.1E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 7.8E+00 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 1.7E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.8E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 1.5E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 4.2E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.5E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 5.6E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ZINC | 1.1E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 8.0E-02 | mg/kg | 9.7E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.9E-08 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 4.5E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.5E-08 (a) |
| | | | Dermal | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 4.6E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 4.6E-07 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 6.8E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 6.8E-08 (a) |
| | | | Dermal | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 6.6E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 6.6E-09 (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 9.6E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 9.6E-08 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 2.5E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.5E-08 (a) |
| | | | Dermal | NAPHTHALENE | 2.8E+00 | mg/kg | 3.2E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **VOCs** | | | | | | | |
| | | | Dermal | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | NA | mg/kg-d | 4.6E-02 | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **1.2E-05** |
| Surface Water | Surface Water | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.3E+00 | mg/L | 1.7E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 1.2E-03 | mg/L | 1.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 3.1E-02 | mg/L | 4.0E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 6.1E-06 |
| | | | Ingestion | CADMIUM | 6.2E-04 | mg/L | 8.2E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 4.5E-03 | mg/L | 1.8E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 8.9E-07 (a) |
| | | | Ingestion | COBALT | 1.0E-03 | mg/L | 1.3E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 2.0E-03 | mg/L | 2.6E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 6.5E+00 | mg/L | 8.6E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 2.6E-02 | mg/L | 3.4E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 7.0E-02 | mg/L | 9.3E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 1.2E-03 | mg/L | 1.6E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 2.5E-03 | mg/L | 3.2E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | BWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 3.4E-05 | mg/L | 1.3E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.3E-08 (a) |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **7E-06** |
| Surface Water | Surface Water | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.3E+00 | mg/L | 3.2E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 1.2E-03 | mg/L | 2.8E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 3.1E-02 | mg/L | 7.6E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.1E-06 |
| | | | Dermal | CADMIUM | 6.2E-04 | mg/L | 1.5E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 4.5E-03 | mg/L | 3.3E-07 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 6.7E-06 (a) |
| | | | Dermal | COBALT | 1.0E-03 | mg/L | 1.0E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 2.0E-03 | mg/L | 5.0E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 6.5E+00 | mg/L | 1.6E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.6E-02 | mg/L | 6.3E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 7.0E-02 | mg/L | 1.7E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 1.2E-03 | mg/L | 3.1E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 2.5E-03 | mg/L | 6.1E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 3.4E-05 | mg/L | 5.9E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 5.9E-06 (a) |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1E-05** |
| **Exposure Point Total (BWL)** | | | | | | | | | | | **6E-05** |
| Sediment | Sediment | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.6E+04 | mg/kg | 1.5E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 2.0E+00 | mg/kg | 1.9E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 8.8E+01 | mg/kg | 4.9E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 7.3E-06 |
| | | | Ingestion | CADMIUM | 7.7E+00 | mg/kg | 7.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 8.6E+00 | mg/kg | 2.4E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 1.2E-06 (a) |
| | | | Ingestion | COBALT | 8.6E+00 | mg/kg | 8.0E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 2.1E+02 | mg/kg | 1.9E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 4.1E+00 | mg/kg | 3.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 2.7E+04 | mg/kg | 2.5E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.0E+03 | mg/kg | 9.4E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.4E+02 | mg/kg | 1.3E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | NICKEL | 3.7E+01 | mg/kg | 3.4E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 4.7E-01 | mg/kg | 4.3E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 2.6E+01 | mg/kg | 2.4E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.6E-01 | mg/kg | 1.5E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 3.0E-08 |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | KWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 3.2E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.2E-08 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 3.0E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.0E-07 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 3.9E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.9E-08 (a) |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 3.4E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 3.4E-09 (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 4.5E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 4.5E-08 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 1.2E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.2E-08 (a) |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **9.0E-06** |
| Sediment | Sediment | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.6E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 2.0E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 8.8E+01 | mg/kg | 2.3E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 3.4E-06 |
| | | | Dermal | CADMIUM | 7.7E+00 | mg/kg | 6.6E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 8.6E+00 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 8.6E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 2.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.1E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 2.7E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.4E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | NICKEL | 3.7E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 4.7E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 2.6E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.6E-01 | mg/kg | 2.0E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 4.0E-08 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 3.8E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.8E-08 (a) |
| | | | Dermal | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 3.6E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.6E-07 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 4.6E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.6E-08 (a) |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 4.1E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 4.1E-09 (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 5.5E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 5.5E-08 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 1.4E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.4E-08 (a) |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **4.0E-06** |
| Surface Water | Surface Water | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.4E+00 | mg/L | 1.8E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 3.7E-03 | mg/L | 4.9E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 1.7E-02 | mg/L | 2.2E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 3.3E-06 |
| | | | Ingestion | CHROMIUM | 5.3E-03 | mg/L | 2.1E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 1.1E-06 (a) |
| | | | Ingestion | COBALT | 1.6E-03 | mg/L | 2.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | KWL | Ingestion | CYANIDE | 1.8E-03 | mg/L | 2.4E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 3.6E+00 | mg/L | 4.7E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 2.9E-02 | mg/L | 3.9E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 8.0E-02 | mg/L | 1.0E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 5.8E-03 | mg/L | 7.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **4E-06** |
| Surface Water | Surface Water | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.4E+00 | mg/L | 3.4E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 3.7E-03 | mg/L | 9.2E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 1.7E-02 | mg/L | 4.1E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 6.2E-07 |
| | | | Dermal | CHROMIUM | 5.3E-03 | mg/L | 4.0E-07 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 7.9E-06 (a) |
| | | | Dermal | COBALT | 1.6E-03 | mg/L | 1.6E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 1.8E-03 | mg/L | 4.4E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 3.6E+00 | mg/L | 8.9E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.9E-02 | mg/L | 7.3E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 8.0E-02 | mg/L | 2.0E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 5.8E-03 | mg/L | 1.4E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **9E-06** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **3E-05** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

(a) The mutagen risks were calculated for COPCs identified as having a mutagenic mode of action.

**Ingestion - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{\text{IR x FS x EF x ED x CF x ADAF}}{\text{BW x AT}} =$$

| | | Non-mutagens | Mutagens[a] |
|---|---|---|---|
| | | 9.3E-08 (Adolescent) | 2.8E-07 (6-16 years) |
| IR | Ingestion Rate (mg/day) | 100 | 100 |
| FS | Fraction from Contaminated Source | 1 | 1 |
| EF | Sediment Ingestion Exposure Frequency (days/year) | 105 | 105 |
| ED | Sediment Ingestion Exposure Duration (years) | 10 | 10 |
| CF | Conversion Factor (kg/mg) | 0.000001 | 0.000001 |
| BW | Body Weight (kg) | 44 | 44 |
| AT | Averaging Time (days) | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 3 |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{sediment} * IF * B$

(B) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |

**Dermal - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{SA \times AF \times EF \times ED \times CF \times ADAF}{BW \times AT} =$$

| | Non-mutagens | Mutagens[a] |
|---|---|---|
| | 8.6E-07 | 2.6E-06 |
| | (Adolescent) | (6-16 years) |

| | | | |
|---|---|---|---|
| SA | Surface Area Exposed to Sediment ($cm^2$/day) | 4,639 | 4,639 |
| AF | Sediment Skin Adherence Factor ($mg/cm^2$) | 0.2 | 0.2 |
| EF | Sediment Dermal Exposure Frequency (days/year) | 105 | 105 |
| ED | Sediment Dermal Exposure Duration (years) | 10 | 10 |
| CF | Conversion Factor (kg/mg) | 0.000001 | 0.000001 |
| BW | Body Weight (kg) | 44 | 44 |
| AT | Averaging Time (days) | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 3 |

$Intake_{derm}(mg/kg{\cdot}d) = EPC_{sediment} * IF * ABS$

(ABS) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Ingestion - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{IR \times FR \times ET \times EF \times ED \times ADAF}{BW \times AT} =$$

| | Non-mutagens | Mutagens[a] |
|---|---|---|
| | 1.3E-04 | 3.96E-04 |
| | (Adolescent) | (6-16 years) |

| | | | |
|---|---|---|---|
| IR | Ingestion Rate - Surface Water (L/hour) | 0.071 | 0.071 |
| FS | Fraction from Contaminated Source | 1 | 1 |
| ET | Surface Water Exposure Time (hours/day) | 2.0 | 2.0 |
| EF | Surface Water Ingestion Exposure Frequency (days/year) | 105 | 105 |
| ED | Surface Water Exposure Duration (years) | 10 | 10 |
| BW | Body Weight (kg) | 44 | 44 |
| AT | Averaging Time (days) | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 3 |

$Intake_{ing}(mg/kg\text{-}d) = EPC_{sw} \times IF$

Cancer Risk = Intake x Cancer Slope Factor (CSF)

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC Value | EPC Units | Cancer Risk Calculations: Intake/Exposure Value | Intake/Exposure Units | CSF/Unit Risk Value | CSF/Unit Risk Units | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|

**Dermal - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{SA \times EV \times EF \times ED \times ADAF}{BW \times AT} =$$

| | | Non-mutagens | Mutagens[a] |
|---|---|---|---|
| | | 1.2E+01 (Adolescent) | 3.7E+01 (6-16 years) |
| SA | Surface Area Exposed to Surface Water ($cm^2$) | 13,350 | 13,350 |
| EF | Surface Water Dermal Exposure Frequency (days/year) | 105 | 105 |
| ED | Surface Water Dermal Exposure Duration (years) | 10 | 10 |
| EV | Events per Day (events/day) | 1 | 1 |
| BW | Body Weight (kg) | 44 | 44 |
| AT | Averaging Time (days) | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 3 |

$Intake_{derm}$(mg/kg·d) = IF x Absorbed Dose per Event ($DA_{event}$)

($DA_{event}$) presented in Table 4.6

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Calculation of Lifetime Average Daily Dose for Recreator - Trichloroethylene in Sediment**

$Intake_{ing} = [(CAF_o*(IF_{child}+IF_{adult}))+(MAF_o*(IF_{0-2}+IF_{2-6}+IF_{6-16}+IF_{16-26}))]$

| | | |
|---|---|---|
| Age-dependent Adjustment factor for carcinogens - oral slope factor | $CAF_o$ | 0.804 |
| Age-dependent Adjustment factor for mutagens - oral slope factor | $MAF_o$ | 0.202 |

$Intake_{derm} = [(CAF_o*(IF_{child}+IF_{adult})+MAF_o*(IF_{0-2}+IF_{2-6}+IF_{6-16}+IF_{16-26}))]$

**Table 7.6**
**Calculation of Chemical Cancer Risks for Swimmer**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.0E+03 | mg/kg | 9.8E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 2.3E+00 | mg/kg | 7.4E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 9.8E+00 | mg/kg | 1.9E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.9E-06 |
| | | | Ingestion | CHROMIUM | 8.0E-01 | mg/kg | 1.9E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 9.6E-07 (a) |
| | | | Ingestion | COBALT | 6.2E+00 | mg/kg | 2.0E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.0E+02 | mg/kg | 3.3E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 2.7E+00 | mg/kg | 8.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 8.0E+03 | mg/kg | 2.6E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.7E+02 | mg/kg | 5.6E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 3.6E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 8.6E-01 | mg/kg | 2.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 6.5E-02 | mg/kg | 2.1E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 4.3E-08 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 4.7E-05 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.7E-06 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 3.5E-05 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.5E-05 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 7.1E-05 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 7.1E-06 (a) |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 1.5E-05 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 1.5E-07 (a) |
| | | | Ingestion | CHRYSENE | 3.0E+01 | mg/kg | 7.1E-05 | mg/kg-d | 1.0E-03 | (mg/kg-d)-1 | 7.1E-08 (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 3.6E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.6E-06 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 9.7E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 9.7E-07 (a) |
| | | | Ingestion | **TICs** | | | | | | | |
| | | | Ingestion | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 3.9E-06 | mg/kg-d | 1.2E+00 | (mg/kg-d)-1 | 4.7E-06 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **6.0E-05** |
| Sediment | Sediment | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 2.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 9.8E+00 | mg/kg | 2.3E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 3.5E-07 |
| | | | Dermal | CHROMIUM | 8.0E-01 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 6.2E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.0E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 2.7E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 8.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.7E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 8.6E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 6.5E-02 | mg/kg | 7.1E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.4E-08 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 1.3E-05 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.3E-06 (a) |
| | | | Dermal | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 9.6E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 9.6E-06 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 1.9E-05 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.9E-06 (a) |
| | | | Dermal | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 4.1E-06 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 4.1E-08 (a) |
| | | | Dermal | CHRYSENE | 3.0E+01 | mg/kg | 1.9E-05 | mg/kg-d | 1.0E-03 | (mg/kg-d)-1 | 1.9E-08 (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 9.8E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 9.8E-07 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 2.7E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.7E-07 (a) |
| | | | Dermal | **TICs** | | | | | | | |
| | | | Dermal | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 1.2E-06 | mg/kg-d | 1.2E+00 | (mg/kg-d)-1 | 1.5E-06 |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **1.6E-05** |
| Surface Water | Surface Water | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ARSENIC | 7.8E-03 | mg/L | 4.2E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 6.3E-06 |
| | | | Ingestion | CHROMIUM | 2.6E-03 | mg/L | 1.0E-05 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 5.0E-06 (a) |
| | | | Ingestion | COBALT | 2.1E-03 | mg/L | 1.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 4.4E-03 | mg/L | 2.4E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 1.1E+01 | mg/L | 6.1E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 9.5E-01 | mg/L | 5.1E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 2.6E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.6E-08 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 2.0E-04 | mg/L | 7.9E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 7.9E-07 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 5.2E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 5.2E-08 (a) |
| | | | Ingestion | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 9.7E-07 | mg/kg-d | 1.4E-02 | (mg/kg-d)-1 | 1.4E-08 |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 2.7E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.7E-07 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 3.5E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.5E-08 (a) |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **1E-05** |
| Surface Water | Surface Water | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ARSENIC | 7.8E-03 | mg/L | 2.2E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 3.4E-07 |
| | | | Dermal | CHROMIUM | 2.6E-03 | mg/L | 4.3E-07 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 8.6E-06 (a) |
| | | | Dermal | COBALT | 2.1E-03 | mg/L | 2.4E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.4E-03 | mg/L | 1.3E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 1.1E+01 | mg/L | 3.3E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 9.5E-01 | mg/L | 2.7E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | SL | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 1.5E-05 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.5E-06 (a) |
| | | | Dermal | BENZO(A)PYRENE | 2.0E-04 | mg/L | 6.7E-05 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 6.7E-05 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 2.6E-05 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.6E-06 (a) |
| | | | Dermal | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 3.2E-04 | mg/kg-d | 1.4E-02 | (mg/kg-d)-1 | 4.4E-06 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 2.2E-05 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.2E-05 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 3.6E-05 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.6E-06 (a) |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1E-04** |
| **Exposure Point Total (SL)** | | | | | | | | | | | **2E-04** |
| Sediment | Sediment | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.5E+04 | mg/kg | 4.8E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 7.3E+00 | mg/kg | 2.4E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 2.8E+02 | mg/kg | 5.6E-05 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 8.4E-05 |
| | | | Ingestion | CADMIUM | 1.3E+01 | mg/kg | 4.4E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 7.8E+00 | mg/kg | 1.9E-05 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 9.3E-06 (a) |
| | | | Ingestion | COBALT | 1.7E+01 | mg/kg | 5.5E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.8E+02 | mg/kg | 5.8E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 1.5E+01 | mg/kg | 5.0E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 4.2E+04 | mg/kg | 1.4E-02 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.5E+03 | mg/kg | 4.9E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 3.6E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 5.6E+01 | mg/kg | 1.8E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ZINC | 1.1E+03 | mg/kg | 3.7E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 8.0E-02 | mg/kg | 2.6E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 5.3E-08 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 3.2E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.2E-07 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 3.3E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.3E-06 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 4.8E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.8E-07 (a) |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 4.7E-06 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 4.7E-08 (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 6.8E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 6.8E-07 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 1.8E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.8E-07 (a) |
| | | | Ingestion | NAPHTHALENE | 2.8E+00 | mg/kg | 9.4E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **VOCs** | | | | | | | |
| | | | Ingestion | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | 5.0E-08 | mg/kg-d | 4.6E-02 | (mg/kg-d)-1 | 2.3E-09 (a) |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **9.8E-05** |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.5E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 7.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 2.8E+02 | mg/kg | 6.6E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.0E-05 |
| | | | Dermal | CADMIUM | 1.3E+01 | mg/kg | 1.0E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 7.8E+00 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 1.7E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.8E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 1.5E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 4.2E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.5E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 5.6E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ZINC | 1.1E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 8.0E-02 | mg/kg | 8.7E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.7E-08 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 8.8E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 8.8E-08 (a) |
| | | | Dermal | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 9.0E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 9.0E-07 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 1.3E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.3E-07 (a) |
| | | | Dermal | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 1.3E-06 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 1.3E-08 (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 1.9E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.9E-07 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 4.9E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.9E-08 (a) |
| | | | Dermal | NAPHTHALENE | 2.8E+00 | mg/kg | 2.9E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **VOCs** | | | | | | | |
| | | | Dermal | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | NA | mg/kg-d | 4.6E-02 | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **1.1E-05** |
| Surface Water | Surface Water | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.3E+00 | mg/L | 6.9E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 1.2E-03 | mg/L | 6.2E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 3.1E-02 | mg/L | 1.7E-05 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.5E-05 |
| | | | Ingestion | CADMIUM | 6.2E-04 | mg/L | 3.4E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 4.5E-03 | mg/L | 1.8E-05 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 8.8E-06 (a) |
| | | | Ingestion | COBALT | 1.0E-03 | mg/L | 5.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 2.0E-03 | mg/L | 1.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 6.5E+00 | mg/L | 3.5E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 2.6E-02 | mg/L | 1.4E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 7.0E-02 | mg/L | 3.8E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 1.2E-03 | mg/L | 6.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 2.5E-03 | mg/L | 1.3E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | BWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 3.4E-05 | mg/L | 1.3E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.3E-07 (a) |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **3E-05** |
| Surface Water | Surface Water | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.3E+00 | mg/L | 3.7E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 1.2E-03 | mg/L | 3.3E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 3.1E-02 | mg/L | 8.8E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.3E-06 |
| | | | Dermal | CADMIUM | 6.2E-04 | mg/L | 1.8E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 4.5E-03 | mg/L | 7.5E-07 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 1.5E-05 (a) |
| | | | Dermal | COBALT | 1.0E-03 | mg/L | 1.2E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 2.0E-03 | mg/L | 5.7E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 6.5E+00 | mg/L | 1.9E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.6E-02 | mg/L | 7.3E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 7.0E-02 | mg/L | 2.0E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 1.2E-03 | mg/L | 3.6E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 2.5E-03 | mg/L | 7.1E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 3.4E-05 | mg/L | 1.1E-05 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.1E-05 (a) |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **3E-05** |
| **Exposure Point Total (BWL)** | | | | | | | | | | | **2E-04** |
| Sediment | Sediment | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.6E+04 | mg/kg | 5.3E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 2.0E+00 | mg/kg | 6.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 8.8E+01 | mg/kg | 1.7E-05 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.6E-05 |
| | | | Ingestion | CADMIUM | 7.7E+00 | mg/kg | 2.5E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 8.6E+00 | mg/kg | 2.1E-05 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 1.0E-05 (a) |
| | | | Ingestion | COBALT | 8.6E+00 | mg/kg | 2.8E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 2.1E+02 | mg/kg | 6.9E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 4.1E+00 | mg/kg | 1.3E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 2.7E+04 | mg/kg | 8.7E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.0E+03 | mg/kg | 3.3E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.4E+02 | mg/kg | 4.7E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | NICKEL | 3.7E+01 | mg/kg | 1.2E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 4.7E-01 | mg/kg | 1.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 2.6E+01 | mg/kg | 8.6E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.6E-01 | mg/kg | 5.4E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.1E-07 |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | KWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 2.7E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.7E-07 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 2.6E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.6E-06 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 3.3E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.3E-07 (a) |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 2.9E-06 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 2.9E-08 (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 3.9E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.9E-07 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 9.9E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 9.9E-08 (a) |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **4.0E-05** |
| Sediment | Sediment | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.6E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 2.0E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 8.8E+01 | mg/kg | 2.1E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 3.1E-06 |
| | | | Dermal | CADMIUM | 7.7E+00 | mg/kg | 6.0E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 8.6E+00 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 8.6E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 2.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.1E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 2.7E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.4E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | NICKEL | 3.7E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 4.7E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 2.6E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.6E-01 | mg/kg | 1.8E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 3.6E-08 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 7.5E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 7.5E-08 (a) |
| | | | Dermal | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 7.0E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 7.0E-07 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 9.1E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 9.1E-08 (a) |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 7.9E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 7.9E-09 (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 1.1E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.1E-07 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 2.7E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.7E-08 (a) |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **4.1E-06** |
| Surface Water | Surface Water | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.4E+00 | mg/L | 7.4E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 3.7E-03 | mg/L | 2.0E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 1.7E-02 | mg/L | 9.0E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.4E-05 |
| | | | Ingestion | CHROMIUM | 5.3E-03 | mg/L | 2.1E-05 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 1.0E-05 (a) |
| | | | Ingestion | COBALT | 1.6E-03 | mg/L | 8.6E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | KWL | Ingestion | CYANIDE | 1.8E-03 | mg/L | 9.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 3.6E+00 | mg/L | 1.9E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 2.9E-02 | mg/L | 1.6E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 8.0E-02 | mg/L | 4.3E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 5.8E-03 | mg/L | 3.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **2E-05** |
| Surface Water | Surface Water | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.4E+00 | mg/L | 3.9E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 3.7E-03 | mg/L | 1.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 1.7E-02 | mg/L | 4.8E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 7.2E-07 |
| | | | Dermal | CHROMIUM | 5.3E-03 | mg/L | 9.0E-07 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 1.8E-05 (a) |
| | | | Dermal | COBALT | 1.6E-03 | mg/L | 1.8E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 1.8E-03 | mg/L | 5.1E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 3.6E+00 | mg/L | 1.0E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.9E-02 | mg/L | 8.4E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 8.0E-02 | mg/L | 2.3E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 5.8E-03 | mg/L | 1.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **2E-05** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **9E-05** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

(a) The mutagen risks were calculated for COPCs identified as having a mutagenic mode of action.

**Ingestion - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{\text{IR x FS x EF x ED x CF x ADAF}}{\text{BW x AT}} =$$

| | | Non-mutagens | Mutagens[a] | |
|---|---|---|---|---|
| | | 3.3E-07 (Child) | 1.8E-06 (0-2 years) | 5.7E-07 (2-6 years) |
| IR | Ingestion Rate (mg/day) | 200 | 200 | 200 |
| FS | Fraction from Contaminated Source | 1 | 1 | 1 |
| EF | Sediment Ingestion Exposure Frequency (days/year) | 105 | 105 | 105 |
| ED | Sediment Ingestion Exposure Duration (years) | 6 | 2 | 4 |
| CF | Conversion Factor (kg/mg) | 0.000001 | 0.000001 | 0.000001 |
| BW | Body Weight (kg) | 15 | 9 | 17 |
| AT | Averaging Time (days) | 25,550 | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 10 | 3 |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{sediment} * IF * B$

(B) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC Value | EPC Units | Cancer Risk Calculations: Intake/Exposure Value | Intake/Exposure Units | CSF/Unit Risk Value | CSF/Unit Risk Units | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|

**Dermal - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{SA \times AF \times EF \times ED \times CF \times ADAF}{BW \times AT} =$$

| | | Non-mutagens | Mutagens[a] | |
|---|---|---|---|---|
| | | 7.8E-07 | 3.6E-06 | 1.5E-06 |
| | | (Child) | (0-2 years) | (2-6 years) |
| SA | Surface Area Exposed to Sediment ($cm^2$/day) | 2,373 | 1,954 | 2,591 |
| AF | Sediment Skin Adherence Factor ($mg/cm^2$) | 0.2 | 0.2 | 0.2 |
| EF | Sediment Dermal Exposure Frequency (days/year) | 105 | 105 | 105 |
| ED | Sediment Dermal Exposure Duration (years) | 6 | 2 | 4 |
| CF | Conversion Factor (kg/mg) | 0.000001 | 0.000001 | 0.000001 |
| BW | Body Weight (kg) | 15 | 9 | 17 |
| AT | Averaging Time (days) | 25,550 | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 10 | 3 |

$Intake_{derm}(mg/kg{\cdot}d) = EPC_{sediment} * IF * ABS$

(ABS) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Ingestion - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{IR \times FR \times ET \times EF \times ED \times ADAF}{BW \times AT} =$$

| | | Non-mutagens | Mutagens[a] | |
|---|---|---|---|---|
| | | 5.4E-04 | 3.00E-03 | 9.31E-04 |
| | | (Child) | (0-2 years) | (2-6 years) |
| IR | Ingestion Rate - Surface water (L/hour) | 0.12 | 0.12 | 0.12 |
| FS | Fraction from Contaminated Source | 1 | 1 | 1 |
| ET | Surface Water Exposure Time (hours/day) | 2.7 | 2.7 | 2.7 |
| EF | Surface Water Ingestion Exposure Frequency (days/year) | 105 | 105 | 105 |
| ED | Surface Water Exposure Duration (years) | 6 | 2 | 4 |
| BW | Body Weight (kg) | 15 | 9 | 17 |
| AT | Averaging Time (days) | 25,550 | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 10 | 3 |

$Intake_{ing}(mg/kg\text{-}d) = EPC_{sw} \times IF$

Cancer Risk = Intake x Cancer Slope Factor (CSF)

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |

**Dermal - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{\text{SA x EV x EF x ED x ADAF}}{\text{BW x AT}} =$$

| | | Non-mutagens | Mutagens[a] | |
|---|---|---|---|---|
| | | 1.0E+01 | 4.1E+01 | 2.0E+01 |
| | | (Child) | (0-2 years) | (2-6 years) |
| SA | Surface Area Exposed to Surface Water ($cm^2$) | 6,365 | 4,463 | 7,225 |
| EF | Surface Water Dermal Exposure Frequency (days/year) | 105 | 105 | 105 |
| ED | Surface Water Dermal Exposure Duration (years) | 6 | 2 | 4 |
| EV | Events per Day (events/day) | 1 | 1 | 1 |
| BW | Body Weight (kg) | 15 | 9 | 17 |
| AT | Averaging Time (days) | 25,550 | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 10 | 3 |

$Intake_{derm}$(mg/kg·d) = IF x Absorbed Dose per Event ($DA_{event}$)

($DA_{event}$) presented in Table 4.6

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Calculation of Lifetime Average Daily Dose for Recreator - Trichloroethylene in Sediment**

$Intake_{ing} = [(CAF_o*(IF_{child}+IF_{adult}))+(MAF_o*(IF_{0-2}+IF_{2-6}+IF_{6-16}+IF_{16-26}))]$

| | | |
|---|---|---|
| Age-dependent Adjustment factor for carcinogens - oral slope factor | $CAF_o$ | 0.804 |
| Age-dependent Adjustment factor for mutagens - oral slope factor | $MAF_o$ | 0.202 |

$Intake_{derm} = [(CAF_o*(IF_{child}+IF_{adult})+MAF_o*(IF_{0-2}+IF_{2-6}+IF_{6-16}+IF_{16-26}))]$

**Table 7.7**
**Calculation of Chemical Cancer Risks for Angler**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Angler |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Fish | Tissue | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ARSENIC | 1.0E-02 | mg/kg | 1.2E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.8E-06 |
| | | | Ingestion | CHROMIUM | 2.2E-01 | mg/kg | 2.6E-05 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 1.3E-05 |
| | | | Ingestion | LEAD | 1.1E-01 | mg/kg | 1.3E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | 4,4'-DDD | 1.2E-02 | mg/kg | 1.4E-06 | mg/kg-d | 2.4E-01 | (mg/kg-d)-1 | 3.4E-07 |
| | | | Ingestion | 4,4'-DDE | 1.5E-02 | mg/kg | 1.8E-06 | mg/kg-d | 3.4E-01 | (mg/kg-d)-1 | 6.3E-07 |
| | | | Ingestion | AROCLOR-1254 | 5.4E-02 | mg/kg | 6.5E-06 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.3E-05 |
| | | | Ingestion | AROCLOR-1260 | 2.2E-02 | mg/kg | 2.7E-06 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 5.4E-06 |
| | | | **Exposure Route Total [Fish-Ingestion]** | | | | | | | | **3E-05** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **3E-05** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

**Ingestion - Fish**

$$\text{Intake Factor (IF)} = \frac{IR \times EF \times ED}{BW \times AT} = 1.2E\text{-}04 \text{ (Adult)}$$

| | | |
|---|---|---|
| IR | Fish Ingestion Rate (kg/day) | 0.026 |
| EF | Fish Ingestion Exposure Frequency (days/year) | 365 |
| ED | Exposure Duration (years) | 26 |
| BW | Body Weight (kg) | 80 |
| AT | Averaging Time (days) | 25,550 |

$Intake_{ing}(mg/kg\text{-}d) = EPC_{fish} \times IF$

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Table 7.8**
**Calculation of Chemical Cancer Risks for Angler**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Angler |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC Value | EPC Units | Cancer Risk Calculations: Intake/Exposure Value | Intake/Exposure Units | CSF/Unit Risk Value | CSF/Unit Risk Units | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Fish | Tissue | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ARSENIC | 1.0E-02 | mg/kg | 5.6E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 8.4E-07 |
| | | | Ingestion | CHROMIUM | 2.2E-01 | mg/kg | 3.5E-05 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 1.8E-05 (a) |
| | | | Ingestion | LEAD | 1.1E-01 | mg/kg | 6.0E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | 4,4'-DDD | 1.2E-02 | mg/kg | 6.5E-07 | mg/kg-d | 2.4E-01 | (mg/kg-d)-1 | 1.6E-07 |
| | | | Ingestion | 4,4'-DDE | 1.5E-02 | mg/kg | 8.4E-07 | mg/kg-d | 3.4E-01 | (mg/kg-d)-1 | 2.9E-07 |
| | | | Ingestion | AROCLOR-1254 | 5.4E-02 | mg/kg | 2.9E-06 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 5.9E-06 |
| | | | Ingestion | AROCLOR-1260 | 2.2E-02 | mg/kg | 1.2E-06 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 2.4E-06 |
| | | | **Exposure Route Total [Fish-Ingestion]** | | | | | | | | **3E-05** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **3E-05** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

(a) The mutagen risks were calculated for COPCs identified as having a mutagenic mode of action.

**Ingestion - Fish**

$$\text{Intake Factor (IF)} = \frac{\text{IR x EF x ED x ADAF}}{\text{BW x AT}}$$

| | | Non-mutagens | Mutagens[a] |
|---|---|---|---|
| = | | 5.5E-05 (Adolescent) | 1.6E-04 (6-16 years) |
| IR | Fish Ingestion Rate (kg/day) | 0.017 | 0.017 |
| EF | Fish Ingestion Exposure Frequency (days/year) | 365 | 365 |
| ED | Exposure Duration (years) | 10 | 10 |
| BW | Body Weight (kg) | 44 | 44 |
| AT | Averaging Time (days) | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 3 |

$Intake_{ing}(mg/kg\text{-}d) = EPC_{fish} \times IF$

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Table 7.9**
**Calculation of Chemical Cancer Risks for Angler**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Angler |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | Value | Units | Value | Units | Value | Units | |
| Fish | Tissue | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ARSENIC | 1.0E-02 | mg/kg | 5.2E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 7.9E-07 |
| | | | Ingestion | CHROMIUM | 2.2E-01 | mg/kg | 8.1E-05 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 4.0E-05 (a) |
| | | | Ingestion | LEAD | 1.1E-01 | mg/kg | 5.6E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | 4,4'-DDD | 1.2E-02 | mg/kg | 6.1E-07 | mg/kg-d | 2.4E-01 | (mg/kg-d)-1 | 1.5E-07 |
| | | | Ingestion | 4,4'-DDE | 1.5E-02 | mg/kg | 7.9E-07 | mg/kg-d | 3.4E-01 | (mg/kg-d)-1 | 2.7E-07 |
| | | | Ingestion | AROCLOR-1254 | 5.4E-02 | mg/kg | 2.8E-06 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 5.5E-06 |
| | | | Ingestion | AROCLOR-1260 | 2.2E-02 | mg/kg | 1.1E-06 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 2.3E-06 |
| | | | **Exposure Route Total [Fish-Ingestion]** | | | | | | | | **5E-05** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **5E-05** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

(a) The mutagen risks were calculated for COPCs identified as having a mutagenic mode of action.

**Ingestion - Fish**

$$\text{Intake Factor (IF)} = \frac{\text{IR x EF x ED x ADAF}}{\text{BW x AT}}$$

| | | = | Non-mutagens | Mutagens[a] | |
|---|---|---|---|---|---|
| | | | 5.1E-05 (Child) | 2.9E-04 (0-2 years) | 8.9E-05 (2-6 years) |
| IR | Fish Ingestion Rate (kg/day) | | 0.009 | 0.009 | 0.009 |
| EF | Fish Ingestion Exposure Frequency (days/year) | | 365 | 365 | 365 |
| ED | Exposure Duration (years) | | 6 | 2 | 4 |
| BW | Body Weight (kg) | | 15 | 9 | 17 |
| AT | Averaging Time (days) | | 25,550 | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | | -- | 10 | 3 |

$Intake_{ing}(mg/kg\text{-}d) = EPC_{fish} \times IF$

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Table 7.10**
**Calculation of Chemical Non-cancer Hazards for Recreator**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.0E+03 | mg/kg | 4.5E-04 | mg/kg-d | 1.0E+00 | mg/kg-d | 4.5E-04 |
| | | | Ingestion | ANTIMONY | 2.3E+00 | mg/kg | 3.4E-07 | mg/kg-d | 4.0E-04 | mg/kg-d | 8.5E-04 |
| | | | Ingestion | ARSENIC | 9.8E+00 | mg/kg | 8.9E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.0E-03 |
| | | | Ingestion | CHROMIUM | 8.0E-01 | mg/kg | 1.2E-07 | mg/kg-d | 3.0E-03 | mg/kg-d | 4.0E-05 |
| | | | Ingestion | COBALT | 6.2E+00 | mg/kg | 9.3E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.1E-03 |
| | | | Ingestion | COPPER | 1.0E+02 | mg/kg | 1.5E-05 | mg/kg-d | 4.0E-02 | mg/kg-d | 3.8E-04 |
| | | | Ingestion | CYANIDE | 2.7E+00 | mg/kg | 4.0E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 6.7E-04 |
| | | | Ingestion | IRON | 8.0E+03 | mg/kg | 1.2E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.7E-03 |
| | | | Ingestion | LEAD | 1.7E+02 | mg/kg | 2.6E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 1.6E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 6.9E-04 |
| | | | Ingestion | THALLIUM | 8.6E-01 | mg/kg | 1.3E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 1.3E-02 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 6.5E-02 | mg/kg | 9.8E-09 | mg/kg-d | 2.0E-05 | mg/kg-d | 4.9E-04 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 3.0E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 2.2E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.4E-03 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 4.4E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 9.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | CHRYSENE | 3.0E+01 | mg/kg | 4.5E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 2.3E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 6.1E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | **TICs** | | | | | | | |
| | | | Ingestion | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 1.8E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **3.2E-02** |
| Sediment | Sediment | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.0E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 2.3E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 9.8E+00 | mg/kg | 5.4E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.8E-03 |
| | | | Dermal | CHROMIUM | 8.0E-01 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 6.2E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.0E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 2.7E+00 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 8.0E+03 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.7E+02 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 8.6E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 6.5E-02 | mg/kg | 1.7E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 8.3E-04 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 4.7E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 3.5E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.2E-02 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 7.0E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 1.5E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | CHRYSENE | 3.0E+01 | mg/kg | 7.0E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 3.5E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 9.6E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | **TICs** | | | | | | | |
| | | | Dermal | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 2.8E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **1.4E-02** |
| Surface Water | Surface Water | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ARSENIC | 7.8E-03 | mg/L | 7.1E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.4E-04 |
| | | | Dermal | CHROMIUM | 2.6E-03 | mg/L | 2.3E-08 | mg/kg-d | 7.5E-05 | mg/kg-d | 3.1E-04 |
| | | | Dermal | COBALT | 2.1E-03 | mg/L | 7.7E-09 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.6E-05 |
| | | | Dermal | CYANIDE | 4.4E-03 | mg/L | 4.0E-08 | mg/kg-d | 6.0E-04 | mg/kg-d | 6.7E-05 |
| | | | Dermal | IRON | 1.1E+01 | mg/L | 1.0E-04 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.5E-04 |
| | | | Dermal | MANGANESE | 9.5E-01 | mg/L | 8.6E-06 | mg/kg-d | 9.6E-04 | mg/kg-d | 9.0E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 1.3E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 2.0E-04 | mg/L | 6.0E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.0E-02 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 2.3E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 1.7E-04 | mg/kg-d | 2.0E-02 | mg/kg-d | 8.3E-03 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 1.9E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 3.2E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **3.8E-02** |
| **Exposure Point Total (SL)** | | | | | | | | | | | **8E-02** |
| Soil | Soil (0-2 ft bgs) | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.8E+03 | mg/kg | 2.0E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 2.0E-03 |
| | | | Ingestion | ANTIMONY | 1.4E+00 | mg/kg | 7.3E-07 | mg/kg-d | 4.0E-04 | mg/kg-d | 1.8E-03 |
| | | | Ingestion | ARSENIC | 1.1E+02 | mg/kg | 3.5E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.2E-01 |
| | | | Ingestion | CADMIUM | 2.3E+00 | mg/kg | 1.2E-06 | mg/kg-d | 1.0E-03 | mg/kg-d | 1.2E-03 |
| | | | Ingestion | CHROMIUM | 2.0E+00 | mg/kg | 1.0E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 3.4E-04 |
| | | | Ingestion | COBALT | 1.1E+00 | mg/kg | 5.6E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.9E-03 |
| | | | Ingestion | CYANIDE | 6.0E-01 | mg/kg | 3.1E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 5.1E-04 |
| | | | Ingestion | IRON | 6.3E+03 | mg/kg | 3.2E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 4.6E-03 |
| | | | Ingestion | LEAD | 1.9E+02 | mg/kg | 9.6E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | THALLIUM | 8.5E-01 | mg/kg | 4.4E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 4.4E-02 |
| | | | Ingestion | VANADIUM | 1.2E+01 | mg/kg | 6.4E-06 | mg/kg-d | 5.0E-03 | mg/kg-d | 1.3E-03 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | BWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E-01 | mg/kg | 6.9E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.3E-04 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **1.8E-01** |
| Soil | Soil (0-2 ft bgs) | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.8E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 1.4E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 1.1E+02 | mg/kg | 7.5E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.5E-02 |
| | | | Dermal | CADMIUM | 2.3E+00 | mg/kg | 5.0E-09 | mg/kg-d | 2.5E-05 | mg/kg-d | 2.0E-04 |
| | | | Dermal | CHROMIUM | 2.0E+00 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 1.1E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 6.0E-01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 6.3E+03 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.9E+02 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 8.5E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 1.2E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 1.4E-01 | mg/kg | 3.8E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.3E-04 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **2.5E-02** |
| Soil | Particulates in Air | BWL | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 1.2E-06 | mg/m3 | 1.6E-07 | mg/m3 | 5.0E-03 | mg/m3 | 3.2E-05 |
| | | | Inhalation | ANTIMONY | 4.4E-10 | mg/m3 | 6.0E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | ARSENIC | 3.6E-08 | mg/m3 | 4.9E-09 | mg/m3 | 1.5E-05 | mg/m3 | 3.2E-04 |
| | | | Inhalation | CADMIUM | 7.1E-10 | mg/m3 | 9.7E-11 | mg/m3 | 1.0E-05 | mg/m3 | 9.7E-06 |
| | | | Inhalation | CHROMIUM | 6.2E-10 | mg/m3 | 8.5E-11 | mg/m3 | 1.0E-04 | mg/m3 | 8.5E-07 |
| | | | Inhalation | COBALT | 3.4E-10 | mg/m3 | 4.6E-11 | mg/m3 | 6.0E-06 | mg/m3 | 7.7E-06 |
| | | | Inhalation | CYANIDE | 7.9E-06 | mg/m3 | 1.1E-06 | mg/m3 | 8.0E-04 | mg/m3 | 1.4E-03 |
| | | | Inhalation | IRON | 1.9E-06 | mg/m3 | 2.7E-07 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | LEAD | 5.8E-08 | mg/m3 | 7.9E-09 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | THALLIUM | 2.6E-10 | mg/m3 | 3.6E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | VANADIUM | 3.9E-09 | mg/m3 | 5.3E-10 | mg/m3 | 1.0E-04 | mg/m3 | 5.3E-06 |
| | | | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)PYRENE | 4.2E-11 | mg/m3 | 5.7E-12 | mg/m3 | 2.0E-06 | mg/m3 | 2.9E-06 |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **1.7E-03** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.5E+04 | mg/kg | 2.2E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 2.2E-03 |
| | | | Ingestion | ANTIMONY | 7.3E+00 | mg/kg | 1.1E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 2.7E-03 |
| | | | Ingestion | ARSENIC | 2.8E+02 | mg/kg | 2.6E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 8.5E-02 |
| | | | Ingestion | CADMIUM | 1.3E+01 | mg/kg | 2.0E-06 | mg/kg-d | 1.0E-03 | mg/kg-d | 2.0E-03 |
| | | | Ingestion | CHROMIUM | 7.8E+00 | mg/kg | 1.2E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 3.9E-04 |
| | | | Ingestion | COBALT | 1.7E+01 | mg/kg | 2.5E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 8.4E-03 |
| | | | Ingestion | COPPER | 1.8E+02 | mg/kg | 2.7E-05 | mg/kg-d | 4.0E-02 | mg/kg-d | 6.6E-04 |
| | | | Ingestion | CYANIDE | 1.5E+01 | mg/kg | 2.3E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 3.8E-03 |
| | | | Ingestion | IRON | 4.2E+04 | mg/kg | 6.4E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 9.1E-03 |
| | | | Ingestion | LEAD | 1.5E+03 | mg/kg | 2.2E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 1.7E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 6.9E-04 |
| | | | Ingestion | VANADIUM | 5.6E+01 | mg/kg | 8.4E-06 | mg/kg-d | 5.0E-03 | mg/kg-d | 1.7E-03 |
| | | | Ingestion | ZINC | 1.1E+03 | mg/kg | 1.7E-04 | mg/kg-d | 3.0E-01 | mg/kg-d | 5.6E-04 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 8.0E-02 | mg/kg | 1.2E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 6.0E-04 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 2.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 2.1E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 6.9E-04 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 3.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 3.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 4.3E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 1.1E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | NAPHTHALENE | 2.8E+00 | mg/kg | 4.3E-07 | mg/kg-d | 2.0E-02 | mg/kg-d | 2.1E-05 |
| | | | Ingestion | **VOCs** | | | | | | | |
| | | | Ingestion | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | 1.0E-08 | mg/kg-d | 5.0E-04 | mg/kg-d | 2.0E-05 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **1.2E-01** |
| Sediment | Sediment | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.5E+04 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 7.3E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 2.8E+02 | mg/kg | 1.5E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.2E-02 |
| | | | Dermal | CADMIUM | 1.3E+01 | mg/kg | 2.4E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 9.7E-04 |
| | | | Dermal | CHROMIUM | 7.8E+00 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 1.7E+01 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.8E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 1.5E+01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Dermal | IRON | 4.2E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.5E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 5.6E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | ZINC | 1.1E+03 | mg/kg | NA | mg/kg-d | 3.0E-01 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 8.0E-02 | mg/kg | 2.0E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.0E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 3.2E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 3.2E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.1E-03 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 4.8E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 4.6E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 6.7E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 1.8E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | NAPHTHALENE | 2.8E+00 | mg/kg | 6.7E-07 | mg/kg-d | 2.0E-02 | mg/kg-d | 3.4E-05 |
| | | | Dermal | **VOCs** | | | | | | | |
| | | | Dermal | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | NA | mg/kg-d | 5.0E-04 | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **5.5E-02** |
| Surface Water | Surface Water | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.3E+00 | mg/L | 1.2E-05 | mg/kg-d | 1.0E+00 | mg/kg-d | 1.2E-05 |
| | | | Dermal | ANTIMONY | 1.2E-03 | mg/L | 1.0E-08 | mg/kg-d | 6.0E-05 | mg/kg-d | 1.7E-04 |
| | | | Dermal | ARSENIC | 3.1E-02 | mg/L | 2.8E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 9.3E-04 |
| | | | Dermal | CADMIUM | 6.2E-04 | mg/L | 5.7E-09 | mg/kg-d | 2.5E-05 | mg/kg-d | 2.3E-04 |
| | | | Dermal | CHROMIUM | 4.5E-03 | mg/L | 4.1E-08 | mg/kg-d | 7.5E-05 | mg/kg-d | 5.4E-04 |
| | | | Dermal | COBALT | 1.0E-03 | mg/L | 3.7E-09 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.2E-05 |
| | | | Dermal | CYANIDE | 2.0E-03 | mg/L | 1.8E-08 | mg/kg-d | 6.0E-04 | mg/kg-d | 3.0E-05 |
| | | | Dermal | IRON | 6.5E+00 | mg/L | 5.9E-05 | mg/kg-d | 7.0E-01 | mg/kg-d | 8.4E-05 |
| | | | Dermal | LEAD | 2.6E-02 | mg/L | 2.3E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 7.0E-02 | mg/L | 6.4E-07 | mg/kg-d | 9.6E-04 | mg/kg-d | 6.6E-04 |
| | | | Dermal | THALLIUM | 1.2E-03 | mg/L | 1.1E-08 | mg/kg-d | 1.0E-05 | mg/kg-d | 1.1E-03 |
| | | | Dermal | VANADIUM | 2.5E-03 | mg/L | 2.2E-08 | mg/kg-d | 1.3E-04 | mg/kg-d | 1.7E-04 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 3.4E-05 | mg/L | 1.0E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.4E-03 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **7.4E-03** |
| **Exposure Point Total (BWL)** | | | | | | | | | | | **4E-01** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | HC | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 9.2E+03 | mg/kg | 4.7E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 4.7E-03 |
| | | | Ingestion | ANTIMONY | 5.3E+00 | mg/kg | 2.7E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 6.8E-03 |
| | | | Ingestion | ARSENIC | 5.0E+02 | mg/kg | 1.5E-04 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.1E-01 |
| | | | Ingestion | BARIUM | 1.9E+03 | mg/kg | 1.0E-03 | mg/kg-d | 2.0E-01 | mg/kg-d | 5.0E-03 |
| | | | Ingestion | CADMIUM | 2.9E+00 | mg/kg | 1.5E-06 | mg/kg-d | 1.0E-03 | mg/kg-d | 1.5E-03 |
| | | | Ingestion | CHROMIUM | 3.2E+01 | mg/kg | 1.7E-05 | mg/kg-d | 3.0E-03 | mg/kg-d | 5.5E-03 |
| | | | Ingestion | COBALT | 6.3E+00 | mg/kg | 3.2E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.1E-02 |
| | | | Ingestion | COPPER | 1.4E+02 | mg/kg | 7.3E-05 | mg/kg-d | 4.0E-02 | mg/kg-d | 1.8E-03 |
| | | | Ingestion | CYANIDE | 4.9E+01 | mg/kg | 2.5E-05 | mg/kg-d | 6.0E-04 | mg/kg-d | 4.2E-02 |
| | | | Ingestion | IRON | 2.8E+04 | mg/kg | 1.4E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 2.0E-02 |
| | | | Ingestion | LEAD | 3.3E+03 | mg/kg | 1.7E-03 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 3.4E+02 | mg/kg | 1.7E-04 | mg/kg-d | 2.4E-02 | mg/kg-d | 7.2E-03 |
| | | | Ingestion | MERCURY | 7.7E-01 | mg/kg | 4.0E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.3E-03 |
| | | | Ingestion | NICKEL | 1.4E+01 | mg/kg | 7.0E-06 | mg/kg-d | 2.0E-02 | mg/kg-d | 3.5E-04 |
| | | | Ingestion | THALLIUM | 6.6E-01 | mg/kg | 3.4E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 3.4E-02 |
| | | | Ingestion | VANADIUM | 3.0E+01 | mg/kg | 1.6E-05 | mg/kg-d | 5.0E-03 | mg/kg-d | 3.1E-03 |
| | | | Ingestion | ZINC | 5.3E+02 | mg/kg | 2.7E-04 | mg/kg-d | 3.0E-01 | mg/kg-d | 9.1E-04 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 5.5E-02 | mg/kg | 2.8E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.4E-03 |
| | | | Ingestion | AROCLOR-1260 | 1.7E-01 | mg/kg | 8.5E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 4.2E-03 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.6E+00 | mg/kg | 8.2E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.8E+00 | mg/kg | 9.0E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.0E-03 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 1.0E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.8E+00 | mg/kg | 9.5E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 3.0E-01 | mg/kg | 1.5E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.7E-01 | mg/kg | 4.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | NAPHTHALENE | 2.7E-01 | mg/kg | 1.4E-07 | mg/kg-d | 2.0E-02 | mg/kg-d | 6.8E-06 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **6.6E-01** |
| Soil | Soil (0-2 ft bgs) | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 9.2E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 5.3E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 5.0E+02 | mg/kg | 3.2E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.1E-01 |
| | | | Dermal | BARIUM | 1.9E+03 | mg/kg | NA | mg/kg-d | 1.4E-02 | mg/kg-d | NA |
| | | | Dermal | CADMIUM | 2.9E+00 | mg/kg | 6.3E-09 | mg/kg-d | 2.5E-05 | mg/kg-d | 2.5E-04 |
| | | | Dermal | CHROMIUM | 3.2E+01 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 6.3E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.4E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 4.9E+01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 2.8E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | HC | Dermal | LEAD | 3.3E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 3.4E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | MERCURY | 7.7E-01 | mg/kg | NA | mg/kg-d | 2.1E-05 | mg/kg-d | NA |
| | | | Dermal | NICKEL | 1.4E+01 | mg/kg | NA | mg/kg-d | 8.0E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 6.6E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 3.0E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | ZINC | 5.3E+02 | mg/kg | NA | mg/kg-d | 3.0E-01 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 5.5E-02 | mg/kg | 1.7E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 8.3E-04 |
| | | | Dermal | AROCLOR-1260 | 1.7E-01 | mg/kg | 5.0E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 2.5E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.6E+00 | mg/kg | 4.5E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.8E+00 | mg/kg | 4.9E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.6E-03 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 5.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.8E+00 | mg/kg | 5.2E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 3.0E-01 | mg/kg | 8.3E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.7E-01 | mg/kg | 2.2E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | NAPHTHALENE | 2.7E-01 | mg/kg | 7.5E-08 | mg/kg-d | 2.0E-02 | mg/kg-d | 3.8E-06 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **1.1E-01** |
| Soil | Particulates in Air | HC | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 2.8E-06 | mg/m3 | 3.9E-07 | mg/m3 | 5.0E-03 | mg/m3 | 7.8E-05 |
| | | | Inhalation | ANTIMONY | 1.6E-09 | mg/m3 | 2.3E-10 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | ARSENIC | 1.5E-07 | mg/m3 | 2.1E-08 | mg/m3 | 1.5E-05 | mg/m3 | 1.4E-03 |
| | | | Inhalation | BARIUM | 6.0E-07 | mg/m3 | 8.2E-08 | mg/m3 | 5.0E-04 | mg/m3 | 1.6E-04 |
| | | | Inhalation | CADMIUM | 9.0E-10 | mg/m3 | 1.2E-10 | mg/m3 | 1.0E-05 | mg/m3 | 1.2E-05 |
| | | | Inhalation | CHROMIUM | 9.9E-09 | mg/m3 | 1.4E-09 | mg/m3 | 1.0E-04 | mg/m3 | 1.4E-05 |
| | | | Inhalation | COBALT | 1.9E-09 | mg/m3 | 2.7E-10 | mg/m3 | 6.0E-06 | mg/m3 | 4.4E-05 |
| | | | Inhalation | COPPER | 4.4E-08 | mg/m3 | 6.0E-09 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | CYANIDE | 6.5E-04 | mg/m3 | 8.9E-05 | mg/m3 | 8.0E-04 | mg/m3 | 1.1E-01 |
| | | | Inhalation | IRON | 8.5E-06 | mg/m3 | 1.2E-06 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | LEAD | 1.0E-06 | mg/m3 | 1.4E-07 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | MANGANESE | 1.0E-07 | mg/m3 | 1.4E-08 | mg/m3 | 5.0E-05 | mg/m3 | 2.9E-04 |
| | | | Inhalation | MERCURY | 2.4E-10 | mg/m3 | 3.3E-11 | mg/m3 | 3.0E-04 | mg/m3 | 1.1E-07 |
| | | | Inhalation | NICKEL | 4.2E-09 | mg/m3 | 5.8E-10 | mg/m3 | 9.0E-05 | mg/m3 | 6.4E-06 |
| | | | Inhalation | THALLIUM | 2.0E-10 | mg/m3 | 2.8E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | VANADIUM | 9.4E-09 | mg/m3 | 1.3E-09 | mg/m3 | 1.0E-04 | mg/m3 | 1.3E-05 |
| | | | Inhalation | ZINC | 1.6E-07 | mg/m3 | 2.3E-08 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | **PEST/PCB** | | | | | | | |
| | | | Inhalation | AROCLOR-1254 | 5.1E-08 | mg/m3 | 7.0E-09 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | AROCLOR-1260 | 9.8E-08 | mg/m3 | 1.3E-08 | mg/m3 | NA | mg/m3 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Particulates in Air (sc | HC | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)ANTHRACENE | 2.8E-07 | mg/m3 | 3.9E-08 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | BENZO(A)PYRENE | 5.4E-10 | mg/m3 | 7.4E-11 | mg/m3 | 2.0E-06 | mg/m3 | 3.7E-05 |
| | | | Inhalation | BENZO(B)FLUORANTHENE | 6.2E-10 | mg/m3 | 8.5E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | BENZO(K)FLUORANTHENE | 5.7E-10 | mg/m3 | 7.8E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | DIBENZO(A,H)ANTHRACENE | 9.2E-11 | mg/m3 | 1.3E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | INDENO(1,2,3-CD)PYRENE | 2.4E-10 | mg/m3 | 3.3E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | NAPHTHALENE | 4.5E-06 | mg/m3 | 6.1E-07 | mg/m3 | 3.0E-03 | mg/m3 | 2.0E-04 |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **1.1E-01** |
| Sediment | Sediment | HC | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 8.3E+03 | mg/kg | 1.3E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 1.3E-03 |
| | | | Ingestion | ANTIMONY | 2.5E+00 | mg/kg | 3.7E-07 | mg/kg-d | 4.0E-04 | mg/kg-d | 9.2E-04 |
| | | | Ingestion | ARSENIC | 3.9E+02 | mg/kg | 3.5E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.2E-01 |
| | | | Ingestion | BARIUM | 1.0E+03 | mg/kg | 1.5E-04 | mg/kg-d | 2.0E-01 | mg/kg-d | 7.6E-04 |
| | | | Ingestion | CADMIUM | 4.5E+00 | mg/kg | 6.8E-07 | mg/kg-d | 1.0E-03 | mg/kg-d | 6.8E-04 |
| | | | Ingestion | CHROMIUM | 2.2E+01 | mg/kg | 3.3E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 1.1E-03 |
| | | | Ingestion | COBALT | 5.0E+00 | mg/kg | 7.5E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.5E-03 |
| | | | Ingestion | COPPER | 1.7E+02 | mg/kg | 2.6E-05 | mg/kg-d | 4.0E-02 | mg/kg-d | 6.4E-04 |
| | | | Ingestion | CYANIDE | 4.8E+01 | mg/kg | 7.2E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.2E-02 |
| | | | Ingestion | IRON | 1.7E+04 | mg/kg | 2.6E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 3.7E-03 |
| | | | Ingestion | LEAD | 2.9E+03 | mg/kg | 4.3E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 8.1E+01 | mg/kg | 1.2E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 5.1E-04 |
| | | | Ingestion | NICKEL | 3.3E+01 | mg/kg | 5.0E-06 | mg/kg-d | 2.0E-02 | mg/kg-d | 2.5E-04 |
| | | | Ingestion | THALLIUM | 1.6E+00 | mg/kg | 2.5E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 2.5E-02 |
| | | | Ingestion | VANADIUM | 2.4E+01 | mg/kg | 3.7E-06 | mg/kg-d | 5.0E-03 | mg/kg-d | 7.3E-04 |
| | | | Ingestion | ZINC | 4.9E+02 | mg/kg | 7.3E-05 | mg/kg-d | 3.0E-01 | mg/kg-d | 2.4E-04 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.4E-01 | mg/kg | 2.0E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.0E-03 |
| | | | Ingestion | AROCLOR-1260 | 5.8E-02 | mg/kg | 8.7E-09 | mg/kg-d | 2.0E-05 | mg/kg-d | 4.4E-04 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 7.1E-01 | mg/kg | 1.1E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 7.0E-01 | mg/kg | 1.1E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.5E-04 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 9.5E-01 | mg/kg | 1.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.9E-01 | mg/kg | 2.8E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 3.9E-01 | mg/kg | 5.8E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **1.7E-01** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 8.3E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 2.5E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 3.9E+02 | mg/kg | 2.1E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.0E-02 |
| | | | Dermal | BARIUM | 1.0E+03 | mg/kg | NA | mg/kg-d | 1.4E-02 | mg/kg-d | NA |
| | | | Dermal | CADMIUM | 4.5E+00 | mg/kg | 8.2E-09 | mg/kg-d | 2.5E-05 | mg/kg-d | 3.3E-04 |
| | | | Dermal | CHROMIUM | 2.2E+01 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 5.0E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.7E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 4.8E+01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 1.7E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 2.9E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 8.1E+01 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | NICKEL | 3.3E+01 | mg/kg | NA | mg/kg-d | 8.0E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 1.6E+00 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 2.4E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | ZINC | 4.9E+02 | mg/kg | NA | mg/kg-d | 3.0E-01 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.4E-01 | mg/kg | 3.4E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.7E-03 |
| | | | Dermal | AROCLOR-1260 | 5.8E-02 | mg/kg | 1.5E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 7.4E-04 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 7.1E-01 | mg/kg | 1.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 7.0E-01 | mg/kg | 1.6E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.5E-04 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 9.5E-01 | mg/kg | 2.2E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.9E-01 | mg/kg | 4.5E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 3.9E-01 | mg/kg | 9.2E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **7.3E-02** |
| Surface Water | Surface Water | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 6.2E+00 | mg/L | 5.6E-05 | mg/kg-d | 1.0E+00 | mg/kg-d | 5.6E-05 |
| | | | Dermal | ANTIMONY | 3.4E-03 | mg/L | 3.0E-08 | mg/kg-d | 6.0E-05 | mg/kg-d | 5.1E-04 |
| | | | Dermal | ARSENIC | 1.1E-01 | mg/L | 9.8E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.3E-03 |
| | | | Dermal | BARIUM | 4.5E-01 | mg/L | 4.1E-06 | mg/kg-d | 1.4E-02 | mg/kg-d | 2.9E-04 |
| | | | Dermal | CADMIUM | 2.5E-03 | mg/L | 2.3E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 9.1E-04 |
| | | | Dermal | CHROMIUM | 1.2E-01 | mg/L | 1.1E-06 | mg/kg-d | 7.5E-05 | mg/kg-d | 1.4E-02 |
| | | | Dermal | COBALT | 2.7E-03 | mg/L | 9.9E-09 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.3E-05 |
| | | | Dermal | COPPER | 2.8E-02 | mg/L | 2.6E-07 | mg/kg-d | 4.0E-02 | mg/kg-d | 6.4E-06 |
| | | | Dermal | CYANIDE | 8.6E-03 | mg/L | 7.8E-08 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.3E-04 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | HC | Dermal | IRON | 1.4E+01 | mg/L | 1.2E-04 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.8E-04 |
| | | | Dermal | LEAD | 2.4E-01 | mg/L | 2.1E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.6E-01 | mg/L | 1.5E-06 | mg/kg-d | 9.6E-04 | mg/kg-d | 1.5E-03 |
| | | | Dermal | MERCURY | 2.0E-04 | mg/L | 1.8E-09 | mg/kg-d | 2.1E-05 | mg/kg-d | 8.7E-05 |
| | | | Dermal | THALLIUM | 5.4E-03 | mg/L | 4.9E-08 | mg/kg-d | 1.0E-05 | mg/kg-d | 4.9E-03 |
| | | | Dermal | VANADIUM | 5.1E-03 | mg/L | 4.6E-08 | mg/kg-d | 1.3E-04 | mg/kg-d | 3.6E-04 |
| | | | Dermal | ZINC | 4.8E-01 | mg/L | 2.6E-06 | mg/kg-d | 3.0E-01 | mg/kg-d | 8.7E-06 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **2.6E-02** |
| **Exposure Point Total (HC)** | | | | | | | | | | | **1E+00** |
| Soil | Soil (0-2 ft bgs) | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 4.6E+03 | mg/kg | 2.4E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 2.4E-03 |
| | | | Ingestion | ANTIMONY | 3.6E+00 | mg/kg | 1.9E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 4.6E-03 |
| | | | Ingestion | ARSENIC | 8.4E+00 | mg/kg | 2.6E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 8.6E-03 |
| | | | Ingestion | CHROMIUM | 9.2E-01 | mg/kg | 4.7E-07 | mg/kg-d | 3.0E-03 | mg/kg-d | 1.6E-04 |
| | | | Ingestion | COBALT | 8.7E-01 | mg/kg | 4.5E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.5E-03 |
| | | | Ingestion | CYANIDE | 3.7E-01 | mg/kg | 1.9E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 3.2E-04 |
| | | | Ingestion | IRON | 7.8E+03 | mg/kg | 4.0E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 5.8E-03 |
| | | | Ingestion | LEAD | 2.1E+02 | mg/kg | 1.1E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | THALLIUM | 4.4E-01 | mg/kg | 2.3E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 2.3E-02 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 1.3E-01 | mg/kg | 6.5E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.2E-04 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.6E-01 | mg/kg | 1.3E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **4.6E-02** |
| Soil | Soil (0-2 ft bgs) | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 4.6E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 3.6E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 8.4E+00 | mg/kg | 5.5E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.8E-03 |
| | | | Dermal | CHROMIUM | 9.2E-01 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 8.7E-01 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 3.7E-01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 7.8E+03 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 2.1E+02 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 4.4E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 1.3E-01 | mg/kg | 3.6E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.2E-04 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.6E-01 | mg/kg | 7.2E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **1.9E-03** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Particulates in Air | KWL | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 1.4E-06 | mg/m3 | 1.9E-07 | mg/m3 | 5.0E-03 | mg/m3 | 3.9E-05 |
| | | | Inhalation | ANTIMONY | 1.1E-09 | mg/m3 | 1.5E-10 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | ARSENIC | 2.6E-09 | mg/m3 | 3.6E-10 | mg/m3 | 1.5E-05 | mg/m3 | 2.4E-05 |
| | | | Inhalation | CHROMIUM | 2.9E-10 | mg/m3 | 3.9E-11 | mg/m3 | 1.0E-04 | mg/m3 | 3.9E-07 |
| | | | Inhalation | COBALT | 2.7E-10 | mg/m3 | 3.7E-11 | mg/m3 | 6.0E-06 | mg/m3 | 6.1E-06 |
| | | | Inhalation | CYANIDE | 4.9E-06 | mg/m3 | 6.7E-07 | mg/m3 | 8.0E-04 | mg/m3 | 8.4E-04 |
| | | | Inhalation | IRON | 2.4E-06 | mg/m3 | 3.3E-07 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | LEAD | 6.6E-08 | mg/m3 | 9.0E-09 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | THALLIUM | 1.4E-10 | mg/m3 | 1.9E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)PYRENE | 3.9E-11 | mg/m3 | 5.4E-12 | mg/m3 | 2.0E-06 | mg/m3 | 2.7E-06 |
| | | | Inhalation | BENZO(B)FLUORANTHENE | 7.9E-11 | mg/m3 | 1.1E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **9.1E-04** |
| Sediment | Sediment | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.6E+04 | mg/kg | 2.4E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 2.4E-03 |
| | | | Ingestion | ANTIMONY | 2.0E+00 | mg/kg | 3.1E-07 | mg/kg-d | 4.0E-04 | mg/kg-d | 7.7E-04 |
| | | | Ingestion | ARSENIC | 8.8E+01 | mg/kg | 8.0E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.7E-02 |
| | | | Ingestion | CADMIUM | 7.7E+00 | mg/kg | 1.2E-06 | mg/kg-d | 1.0E-03 | mg/kg-d | 1.2E-03 |
| | | | Ingestion | CHROMIUM | 8.6E+00 | mg/kg | 1.3E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 4.3E-04 |
| | | | Ingestion | COBALT | 8.6E+00 | mg/kg | 1.3E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.3E-03 |
| | | | Ingestion | COPPER | 2.1E+02 | mg/kg | 3.1E-05 | mg/kg-d | 4.0E-02 | mg/kg-d | 7.9E-04 |
| | | | Ingestion | CYANIDE | 4.1E+00 | mg/kg | 6.2E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.0E-03 |
| | | | Ingestion | IRON | 2.7E+04 | mg/kg | 4.0E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 5.7E-03 |
| | | | Ingestion | LEAD | 1.0E+03 | mg/kg | 1.5E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.4E+02 | mg/kg | 2.1E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 8.9E-04 |
| | | | Ingestion | NICKEL | 3.7E+01 | mg/kg | 5.5E-06 | mg/kg-d | 2.0E-02 | mg/kg-d | 2.8E-04 |
| | | | Ingestion | THALLIUM | 4.7E-01 | mg/kg | 7.0E-08 | mg/kg-d | 1.0E-05 | mg/kg-d | 7.0E-03 |
| | | | Ingestion | VANADIUM | 2.6E+01 | mg/kg | 4.0E-06 | mg/kg-d | 5.0E-03 | mg/kg-d | 7.9E-04 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.6E-01 | mg/kg | 2.5E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.2E-03 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 1.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 1.6E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.4E-04 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 2.1E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 1.8E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 2.5E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 6.3E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **5.4E-02** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.6E+04 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 2.0E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 8.8E+01 | mg/kg | 4.8E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.6E-02 |
| | | | Dermal | CADMIUM | 7.7E+00 | mg/kg | 1.4E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 5.6E-04 |
| | | | Dermal | CHROMIUM | 8.6E+00 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 8.6E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 2.1E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 4.1E+00 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 2.7E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.0E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.4E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | NICKEL | 3.7E+01 | mg/kg | NA | mg/kg-d | 8.0E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 4.7E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 2.6E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.6E-01 | mg/kg | 4.2E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 2.1E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 2.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 2.5E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 8.4E-04 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 3.3E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 2.9E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 3.9E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 9.8E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **1.9E-02** |
| Surface Water | Surface Water | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.4E+00 | mg/L | 1.2E-05 | mg/kg-d | 1.0E+00 | mg/kg-d | 1.2E-05 |
| | | | Dermal | ANTIMONY | 3.7E-03 | mg/L | 3.4E-08 | mg/kg-d | 6.0E-05 | mg/kg-d | 5.6E-04 |
| | | | Dermal | ARSENIC | 1.7E-02 | mg/L | 1.5E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.1E-04 |
| | | | Dermal | CHROMIUM | 5.3E-03 | mg/L | 4.8E-08 | mg/kg-d | 7.5E-05 | mg/kg-d | 6.5E-04 |
| | | | Dermal | COBALT | 1.6E-03 | mg/L | 5.8E-09 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.9E-05 |
| | | | Dermal | CYANIDE | 1.8E-03 | mg/L | 1.6E-08 | mg/kg-d | 6.0E-04 | mg/kg-d | 2.7E-05 |
| | | | Dermal | IRON | 3.6E+00 | mg/L | 3.3E-05 | mg/kg-d | 7.0E-01 | mg/kg-d | 4.7E-05 |
| | | | Dermal | LEAD | 2.9E-02 | mg/L | 2.7E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 8.0E-02 | mg/L | 7.2E-07 | mg/kg-d | 9.6E-04 | mg/kg-d | 7.5E-04 |
| | | | Dermal | THALLIUM | 5.8E-03 | mg/L | 5.3E-08 | mg/kg-d | 1.0E-05 | mg/kg-d | 5.3E-03 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **7.8E-03** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **1E-01** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |

**Ingestion - Soil**

$$\text{Intake Factor (IF)} = \frac{IR \times FS \times EF \times ED \times CF}{BW \times AT}$$

| | | | |
|---|---|---|---|
| = | 5.1E-07 | (Adult) | |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{soil} * IF * B$

(B) presented in Table 5.1

Non-cancer Hazard = Intake/RfD

| | | |
|---|---|---|
| IR | Ingestion Rate (mg/day) | 100 |
| FS | Fraction from Contaminated Source | 1 |
| EF | Soil Ingestion Exposure Frequency (days/year) | 150 |
| ED | Soil Ingestion Exposure Duration (years) | 26 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 80 |
| AT | Averaging Time (days) | 9,490 |

**Dermal - Soil**

$$\text{Intake Factor (IF)} = \frac{SA \times AF \times EF \times ED \times CF}{BW \times AT}$$

| | | | |
|---|---|---|---|
| = | 2.2E-06 | (Adult) | |

$Intake_{derm}(mg/kg{\cdot}d) = EPC_{soil} * IF * ABS$

(ABS) presented in Table 5.1

Non-cancer Hazard = Intake/RfD

| | | |
|---|---|---|
| SA | Surface Area Exposed to Soil ($cm^2$/day) | 6,032 |
| AF | Soil Skin Adherence Factor ($mg/cm^2$) | 0.07 |
| EF | Soil Dermal Exposure Frequency (days/year) | 150 |
| ED | Soil Dermal Exposure Duration (years) | 26 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 80 |
| AT | Averaging Time (days) | 9,490 |

**Inhalation - Soil**

$$\text{Intake Factor (IF)} = \frac{EF \times ED \times ET \times CF}{AT}$$

| | | | |
|---|---|---|---|
| = | 1.4E-01 | (Adult) | |

$EPC_{air} = EPC_{soil}$ x [1/Volatilization Factor (VF) + 1/Particulate Emissions Factor (PEF)]

Exposure = $EPC_{air}$ x IF

Non-cancer Hazard = Exposure/RfC

| | | |
|---|---|---|
| EF | Soil Exposure Frequency (days/year) | 150 |
| ED | Soil Exposure Duration (years) | 26 |
| ET | Soil Exposure Time (hours/day) | 8 |
| CF | Conversion Factor (days/hours) | 0.042 |
| AT | Averaging Time (days) | 9,490 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |

**Ingestion - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{IR \times FS \times EF \times ED \times CF}{BW \times AT}$$

| | | | |
|---|---|---|---|
| = | 1.5E-07 | (Adult) | $Intake_{ing}(mg/kg{\cdot}d) = EPC_{sediment} * IF * B$ |
| IR | Ingestion Rate (mg/day) | 100 | (B) presented in Table 5.1 |
| FS | Fraction from Contaminated Source | 1 | Non-cancer Hazard = Intake/RfD |
| EF | Sediment Ingestion Exposure Frequency (days/year) | 44 | |
| ED | Sediment Ingestion Exposure Duration (years) | 26 | |
| CF | Conversion Factor (kg/mg) | 0.000001 | |
| BW | Body Weight (kg) | 80 | |
| AT | Averaging Time (days) | 9,490 | |

**Dermal - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{SA \times AF \times EF \times ED \times CF}{BW \times AT}$$

| | | | |
|---|---|---|---|
| = | 1.8E-06 | (Adult) | $Intake_{derm}(mg/kg{\cdot}d) = EPC_{sediment} * IF * ABS$ |
| SA | Surface Area Exposed to Sediment ($cm^2$/day) | 6,032 | (ABS) presented in Table 5.1 |
| AF | Sediment Skin Adherence Factor ($mg/cm^2$) | 0.2 | Non-cancer Hazard = Intake/RfD |
| EF | Sediment Dermal Exposure Frequency (days/year) | 44 | |
| ED | Sediment Dermal Exposure Duration (years) | 26 | |
| CF | Conversion Factor (kg/mg) | 0.000001 | |
| BW | Body Weight (kg) | 80 | |
| AT | Averaging Time (days) | 9,490 | |

**Dermal - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{SA \times EV \times EF \times ED}{BW \times AT}$$

| | | | |
|---|---|---|---|
| = | 9.1E+00 | (Adult) | $Intake_{derm}(mg/kg{\cdot}d)$ = IF x Absorbed Dose per Event ($DA_{Event}$) |
| SA | Surface Area Exposed to Surface Water ($cm^2$) | 6,032 | ($DA_{event}$) presented in Table 4.6 |
| EF | Surface Water Dermal Exposure Frequency (days/year) | 44 | Non-cancer Hazard = Intake/RfD |
| ED | Surface Water Dermal Exposure Duration (years) | 26 | |
| EV | Events per Day (events/day) | 1 | |
| BW | Body Weight (kg) | 80 | |
| AT | Averaging Time (days) | 9,490 | |

**Table 7.11**
**Calculation of Chemical Non-cancer Hazards for Recreator**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.0E+03 | mg/kg | 8.1E-04 | mg/kg-d | 1.0E+00 | mg/kg-d | 8.1E-04 |
| | | | Ingestion | ANTIMONY | 2.3E+00 | mg/kg | 6.2E-07 | mg/kg-d | 4.0E-04 | mg/kg-d | 1.5E-03 |
| | | | Ingestion | ARSENIC | 9.8E+00 | mg/kg | 1.6E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.4E-03 |
| | | | Ingestion | CHROMIUM | 8.0E-01 | mg/kg | 2.2E-07 | mg/kg-d | 3.0E-03 | mg/kg-d | 7.3E-05 |
| | | | Ingestion | COBALT | 6.2E+00 | mg/kg | 1.7E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.6E-03 |
| | | | Ingestion | COPPER | 1.0E+02 | mg/kg | 2.8E-05 | mg/kg-d | 4.0E-02 | mg/kg-d | 6.9E-04 |
| | | | Ingestion | CYANIDE | 2.7E+00 | mg/kg | 7.3E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.2E-03 |
| | | | Ingestion | IRON | 8.0E+03 | mg/kg | 2.2E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 3.1E-03 |
| | | | Ingestion | LEAD | 1.7E+02 | mg/kg | 4.6E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 3.0E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 1.2E-03 |
| | | | Ingestion | THALLIUM | 8.6E-01 | mg/kg | 2.3E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 2.3E-02 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 6.5E-02 | mg/kg | 1.8E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 8.8E-04 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 5.4E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 4.0E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.3E-02 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 8.0E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 1.7E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | CHRYSENE | 3.0E+01 | mg/kg | 8.1E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 4.1E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 1.1E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | **TICs** | | | | | | | |
| | | | Ingestion | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 3.3E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **5.7E-02** |
| Sediment | Sediment | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.0E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 2.3E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 9.8E+00 | mg/kg | 7.5E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.5E-03 |
| | | | Dermal | CHROMIUM | 8.0E-01 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 6.2E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.0E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 2.7E+00 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 8.0E+03 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.7E+02 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 8.6E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 6.5E-02 | mg/kg | 2.3E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.1E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 6.5E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 4.8E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.6E-02 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 9.7E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 2.1E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | CHRYSENE | 3.0E+01 | mg/kg | 9.7E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 4.9E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 1.3E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | **TICs** | | | | | | | |
| | | | Dermal | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 3.9E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **2.0E-02** |
| Surface Water | Surface Water | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ARSENIC | 7.8E-03 | mg/L | 9.9E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.3E-04 |
| | | | Dermal | CHROMIUM | 2.6E-03 | mg/L | 3.2E-08 | mg/kg-d | 7.5E-05 | mg/kg-d | 4.3E-04 |
| | | | Dermal | COBALT | 2.1E-03 | mg/L | 1.1E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.6E-05 |
| | | | Dermal | CYANIDE | 4.4E-03 | mg/L | 5.6E-08 | mg/kg-d | 6.0E-04 | mg/kg-d | 9.3E-05 |
| | | | Dermal | IRON | 1.1E+01 | mg/L | 1.4E-04 | mg/kg-d | 7.0E-01 | mg/kg-d | 2.0E-04 |
| | | | Dermal | MANGANESE | 9.5E-01 | mg/L | 1.2E-05 | mg/kg-d | 9.6E-04 | mg/kg-d | 1.2E-02 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 1.8E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 2.0E-04 | mg/L | 8.3E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.8E-02 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 3.2E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 2.3E-04 | mg/kg-d | 2.0E-02 | mg/kg-d | 1.1E-02 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 2.7E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 4.4E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **5.3E-02** |
| **Exposure Point Total (SL)** | | | | | | | | | | | **1E-01** |
| Soil | Soil (0-2 ft bgs) | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.8E+03 | mg/kg | 3.5E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 3.5E-03 |
| | | | Ingestion | ANTIMONY | 1.4E+00 | mg/kg | 1.3E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 3.3E-03 |
| | | | Ingestion | ARSENIC | 1.1E+02 | mg/kg | 6.4E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.1E-01 |
| | | | Ingestion | CADMIUM | 2.3E+00 | mg/kg | 2.1E-06 | mg/kg-d | 1.0E-03 | mg/kg-d | 2.1E-03 |
| | | | Ingestion | CHROMIUM | 2.0E+00 | mg/kg | 1.9E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 6.2E-04 |
| | | | Ingestion | COBALT | 1.1E+00 | mg/kg | 1.0E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.4E-03 |
| | | | Ingestion | CYANIDE | 6.0E-01 | mg/kg | 5.5E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 9.2E-04 |
| | | | Ingestion | IRON | 6.3E+03 | mg/kg | 5.8E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 8.3E-03 |
| | | | Ingestion | LEAD | 1.9E+02 | mg/kg | 1.7E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | THALLIUM | 8.5E-01 | mg/kg | 7.9E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 7.9E-02 |
| | | | Ingestion | VANADIUM | 1.2E+01 | mg/kg | 1.2E-05 | mg/kg-d | 5.0E-03 | mg/kg-d | 2.3E-03 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | BWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E-01 | mg/kg | 1.3E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.2E-04 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **3.2E-01** |
| Soil | Soil (0-2 ft bgs) | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.8E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 1.4E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 1.1E+02 | mg/kg | 1.0E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.5E-02 |
| | | | Dermal | CADMIUM | 2.3E+00 | mg/kg | 6.9E-09 | mg/kg-d | 2.5E-05 | mg/kg-d | 2.8E-04 |
| | | | Dermal | CHROMIUM | 2.0E+00 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 1.1E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 6.0E-01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 6.3E+03 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.9E+02 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 8.5E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 1.2E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 1.4E-01 | mg/kg | 5.3E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.8E-04 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **3.5E-02** |
| Soil | Particulates in Air | BWL | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 1.2E-06 | mg/m3 | 1.6E-07 | mg/m3 | 5.0E-03 | mg/m3 | 3.2E-05 |
| | | | Inhalation | ANTIMONY | 4.4E-10 | mg/m3 | 6.0E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | ARSENIC | 3.6E-08 | mg/m3 | 4.9E-09 | mg/m3 | 1.5E-05 | mg/m3 | 3.2E-04 |
| | | | Inhalation | CADMIUM | 7.1E-10 | mg/m3 | 9.7E-11 | mg/m3 | 1.0E-05 | mg/m3 | 9.7E-06 |
| | | | Inhalation | CHROMIUM | 6.2E-10 | mg/m3 | 8.5E-11 | mg/m3 | 1.0E-04 | mg/m3 | 8.5E-07 |
| | | | Inhalation | COBALT | 3.4E-10 | mg/m3 | 4.6E-11 | mg/m3 | 6.0E-06 | mg/m3 | 7.7E-06 |
| | | | Inhalation | CYANIDE | 7.9E-06 | mg/m3 | 1.1E-06 | mg/m3 | 8.0E-04 | mg/m3 | 1.4E-03 |
| | | | Inhalation | IRON | 1.9E-06 | mg/m3 | 2.7E-07 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | LEAD | 5.8E-08 | mg/m3 | 7.9E-09 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | THALLIUM | 2.6E-10 | mg/m3 | 3.6E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | VANADIUM | 3.9E-09 | mg/m3 | 5.3E-10 | mg/m3 | 1.0E-04 | mg/m3 | 5.3E-06 |
| | | | Inhalation | **PEST/PCB** | | | | | | | |
| | | | Inhalation | BENZO(A)PYRENE | 4.2E-11 | mg/m3 | 5.7E-12 | mg/m3 | 2.0E-06 | mg/m3 | 2.9E-06 |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **1.7E-03** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.5E+04 | mg/kg | 4.0E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 4.0E-03 |
| | | | Ingestion | ANTIMONY | 7.3E+00 | mg/kg | 2.0E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 4.9E-03 |
| | | | Ingestion | ARSENIC | 2.8E+02 | mg/kg | 4.6E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.5E-01 |
| | | | Ingestion | CADMIUM | 1.3E+01 | mg/kg | 3.6E-06 | mg/kg-d | 1.0E-03 | mg/kg-d | 3.6E-03 |
| | | | Ingestion | CHROMIUM | 7.8E+00 | mg/kg | 2.1E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 7.0E-04 |
| | | | Ingestion | COBALT | 1.7E+01 | mg/kg | 4.5E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.5E-02 |
| | | | Ingestion | COPPER | 1.8E+02 | mg/kg | 4.8E-05 | mg/kg-d | 4.0E-02 | mg/kg-d | 1.2E-03 |
| | | | Ingestion | CYANIDE | 1.5E+01 | mg/kg | 4.1E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 6.9E-03 |
| | | | Ingestion | IRON | 4.2E+04 | mg/kg | 1.1E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.6E-02 |
| | | | Ingestion | LEAD | 1.5E+03 | mg/kg | 4.0E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 3.0E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 1.2E-03 |
| | | | Ingestion | VANADIUM | 5.6E+01 | mg/kg | 1.5E-05 | mg/kg-d | 5.0E-03 | mg/kg-d | 3.0E-03 |
| | | | Ingestion | ZINC | 1.1E+03 | mg/kg | 3.0E-04 | mg/kg-d | 3.0E-01 | mg/kg-d | 1.0E-03 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 8.0E-02 | mg/kg | 2.2E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.1E-03 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 3.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 3.7E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.2E-03 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 5.5E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 5.3E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 7.8E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 2.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | NAPHTHALENE | 2.8E+00 | mg/kg | 7.7E-07 | mg/kg-d | 2.0E-02 | mg/kg-d | 3.9E-05 |
| | | | Ingestion | **VOCs** | | | | | | | |
| | | | Ingestion | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | 1.8E-08 | mg/kg-d | 5.0E-04 | mg/kg-d | 3.6E-05 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **2.2E-01** |
| Sediment | Sediment | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.5E+04 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 7.3E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 2.8E+02 | mg/kg | 2.1E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.2E-02 |
| | | | Dermal | CADMIUM | 1.3E+01 | mg/kg | 3.4E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 1.3E-03 |
| | | | Dermal | CHROMIUM | 7.8E+00 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 1.7E+01 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.8E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 1.5E+01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 4.2E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.5E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 5.6E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | ZINC | 1.1E+03 | mg/kg | NA | mg/kg-d | 3.0E-01 | mg/kg-d | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 8.0E-02 | mg/kg | 2.8E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.4E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 4.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 4.5E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.5E-03 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 6.6E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 6.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 9.4E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 2.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | NAPHTHALENE | 2.8E+00 | mg/kg | 9.3E-07 | mg/kg-d | 2.0E-02 | mg/kg-d | 4.7E-05 |
| | | | Dermal | **VOCs** | | | | | | | |
| | | | Dermal | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | NA | mg/kg-d | 5.0E-04 | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **7.6E-02** |
| Surface Water | Surface Water | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.3E+00 | mg/L | 1.6E-05 | mg/kg-d | 1.0E+00 | mg/kg-d | 1.6E-05 |
| | | | Dermal | ANTIMONY | 1.2E-03 | mg/L | 1.5E-08 | mg/kg-d | 6.0E-05 | mg/kg-d | 2.4E-04 |
| | | | Dermal | ARSENIC | 3.1E-02 | mg/L | 3.9E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.3E-03 |
| | | | Dermal | CADMIUM | 6.2E-04 | mg/L | 7.9E-09 | mg/kg-d | 2.5E-05 | mg/kg-d | 3.1E-04 |
| | | | Dermal | CHROMIUM | 4.5E-03 | mg/L | 5.7E-08 | mg/kg-d | 7.5E-05 | mg/kg-d | 7.5E-04 |
| | | | Dermal | COBALT | 1.0E-03 | mg/L | 5.1E-09 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.7E-05 |
| | | | Dermal | CYANIDE | 2.0E-03 | mg/L | 2.5E-08 | mg/kg-d | 6.0E-04 | mg/kg-d | 4.2E-05 |
| | | | Dermal | IRON | 6.5E+00 | mg/L | 8.2E-05 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.2E-04 |
| | | | Dermal | LEAD | 2.6E-02 | mg/L | 3.2E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 7.0E-02 | mg/L | 8.9E-07 | mg/kg-d | 9.6E-04 | mg/kg-d | 9.2E-04 |
| | | | Dermal | THALLIUM | 1.2E-03 | mg/L | 1.6E-08 | mg/kg-d | 1.0E-05 | mg/kg-d | 1.6E-03 |
| | | | Dermal | VANADIUM | 2.5E-03 | mg/L | 3.1E-08 | mg/kg-d | 1.3E-04 | mg/kg-d | 2.4E-04 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 3.4E-05 | mg/L | 1.4E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.7E-03 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1.0E-02** |
| **Exposure Point Total (BWL)** | | | | | | | | | | | **7E-01** |
| Soil | Soil (0-2 ft bgs) | HC | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 9.2E+03 | mg/kg | 8.5E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 8.5E-03 |
| | | | Ingestion | ANTIMONY | 5.3E+00 | mg/kg | 4.9E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 1.2E-02 |
| | | | Ingestion | ARSENIC | 5.0E+02 | mg/kg | 2.8E-04 | mg/kg-d | 3.0E-04 | mg/kg-d | 9.2E-01 |
| | | | Ingestion | BARIUM | 1.9E+03 | mg/kg | 1.8E-03 | mg/kg-d | 2.0E-01 | mg/kg-d | 9.0E-03 |
| | | | Ingestion | CADMIUM | 2.9E+00 | mg/kg | 2.7E-06 | mg/kg-d | 1.0E-03 | mg/kg-d | 2.7E-03 |
| | | | Ingestion | CHROMIUM | 3.2E+01 | mg/kg | 3.0E-05 | mg/kg-d | 3.0E-03 | mg/kg-d | 9.9E-03 |
| | | | Ingestion | COBALT | 6.3E+00 | mg/kg | 5.8E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.9E-02 |
| | | | Ingestion | COPPER | 1.4E+02 | mg/kg | 1.3E-04 | mg/kg-d | 4.0E-02 | mg/kg-d | 3.3E-03 |
| | | | Ingestion | CYANIDE | 4.9E+01 | mg/kg | 4.5E-05 | mg/kg-d | 6.0E-04 | mg/kg-d | 7.6E-02 |
| | | | Ingestion | IRON | 2.8E+04 | mg/kg | 2.6E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 3.7E-02 |

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| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | HC | Ingestion | LEAD | 3.3E+03 | mg/kg | 3.0E-03 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 3.4E+02 | mg/kg | 3.1E-04 | mg/kg-d | 2.4E-02 | mg/kg-d | 1.3E-02 |
| | | | Ingestion | MERCURY | 7.7E-01 | mg/kg | 7.1E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.4E-03 |
| | | | Ingestion | NICKEL | 1.4E+01 | mg/kg | 1.3E-05 | mg/kg-d | 2.0E-02 | mg/kg-d | 6.3E-04 |
| | | | Ingestion | THALLIUM | 6.6E-01 | mg/kg | 6.1E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 6.1E-02 |
| | | | Ingestion | VANADIUM | 3.0E+01 | mg/kg | 2.8E-05 | mg/kg-d | 5.0E-03 | mg/kg-d | 5.7E-03 |
| | | | Ingestion | ZINC | 5.3E+02 | mg/kg | 4.9E-04 | mg/kg-d | 3.0E-01 | mg/kg-d | 1.6E-03 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 5.5E-02 | mg/kg | 5.1E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 2.5E-03 |
| | | | Ingestion | AROCLOR-1260 | 1.7E-01 | mg/kg | 1.5E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 7.7E-03 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.6E+00 | mg/kg | 1.5E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.8E+00 | mg/kg | 1.6E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.4E-03 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 1.9E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.8E+00 | mg/kg | 1.7E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 3.0E-01 | mg/kg | 2.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.7E-01 | mg/kg | 7.2E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | NAPHTHALENE | 2.7E-01 | mg/kg | 2.5E-07 | mg/kg-d | 2.0E-02 | mg/kg-d | 1.2E-05 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **1.2E+00** |
| Soil | Soil (0-2 ft bgs) | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 9.2E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 5.3E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 5.0E+02 | mg/kg | 4.5E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.5E-01 |
| | | | Dermal | BARIUM | 1.9E+03 | mg/kg | NA | mg/kg-d | 1.4E-02 | mg/kg-d | NA |
| | | | Dermal | CADMIUM | 2.9E+00 | mg/kg | 8.8E-09 | mg/kg-d | 2.5E-05 | mg/kg-d | 3.5E-04 |
| | | | Dermal | CHROMIUM | 3.2E+01 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 6.3E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.4E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 4.9E+01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 2.8E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 3.3E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 3.4E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | MERCURY | 7.7E-01 | mg/kg | NA | mg/kg-d | 2.1E-05 | mg/kg-d | NA |
| | | | Dermal | NICKEL | 1.4E+01 | mg/kg | NA | mg/kg-d | 8.0E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 6.6E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 3.0E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | ZINC | 5.3E+02 | mg/kg | NA | mg/kg-d | 3.0E-01 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 5.5E-02 | mg/kg | 2.3E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.2E-03 |
| | | | Dermal | AROCLOR-1260 | 1.7E-01 | mg/kg | 7.0E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 3.5E-03 |

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|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | HC | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.6E+00 | mg/kg | 6.3E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.8E+00 | mg/kg | 6.9E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.3E-03 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 7.9E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.8E+00 | mg/kg | 7.2E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 3.0E-01 | mg/kg | 1.2E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.7E-01 | mg/kg | 3.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | NAPHTHALENE | 2.7E-01 | mg/kg | 1.0E-07 | mg/kg-d | 2.0E-02 | mg/kg-d | 5.2E-06 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **1.6E-01** |
| Soil | Particulates in Air | HC | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 2.8E-06 | mg/m3 | 3.9E-07 | mg/m3 | 5.0E-03 | mg/m3 | 7.8E-05 |
| | | | Inhalation | ANTIMONY | 1.6E-09 | mg/m3 | 2.3E-10 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | ARSENIC | 1.5E-07 | mg/m3 | 2.1E-08 | mg/m3 | 1.5E-05 | mg/m3 | 1.4E-03 |
| | | | Inhalation | BARIUM | 6.0E-07 | mg/m3 | 8.2E-08 | mg/m3 | 5.0E-04 | mg/m3 | 1.6E-04 |
| | | | Inhalation | CADMIUM | 9.0E-10 | mg/m3 | 1.2E-10 | mg/m3 | 1.0E-05 | mg/m3 | 1.2E-05 |
| | | | Inhalation | CHROMIUM | 9.9E-09 | mg/m3 | 1.4E-09 | mg/m3 | 1.0E-04 | mg/m3 | 1.4E-05 |
| | | | Inhalation | COBALT | 1.9E-09 | mg/m3 | 2.7E-10 | mg/m3 | 6.0E-06 | mg/m3 | 4.4E-05 |
| | | | Inhalation | COPPER | 4.4E-08 | mg/m3 | 6.0E-09 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | CYANIDE | 6.5E-04 | mg/m3 | 8.9E-05 | mg/m3 | 8.0E-04 | mg/m3 | 1.1E-01 |
| | | | Inhalation | IRON | 8.5E-06 | mg/m3 | 1.2E-06 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | LEAD | 1.0E-06 | mg/m3 | 1.4E-07 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | MANGANESE | 1.0E-07 | mg/m3 | 1.4E-08 | mg/m3 | 5.0E-05 | mg/m3 | 2.9E-04 |
| | | | Inhalation | MERCURY | 2.4E-10 | mg/m3 | 3.3E-11 | mg/m3 | 3.0E-04 | mg/m3 | 1.1E-07 |
| | | | Inhalation | NICKEL | 4.2E-09 | mg/m3 | 5.8E-10 | mg/m3 | 9.0E-05 | mg/m3 | 6.4E-06 |
| | | | Inhalation | THALLIUM | 2.0E-10 | mg/m3 | 2.8E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | VANADIUM | 9.4E-09 | mg/m3 | 1.3E-09 | mg/m3 | 1.0E-04 | mg/m3 | 1.3E-05 |
| | | | Inhalation | ZINC | 1.6E-07 | mg/m3 | 2.3E-08 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | **PEST/PCB** | | | | | | | |
| | | | Inhalation | AROCLOR-1254 | 5.1E-08 | mg/m3 | 7.0E-09 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | AROCLOR-1260 | 9.8E-08 | mg/m3 | 1.3E-08 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)ANTHRACENE | 2.8E-07 | mg/m3 | 3.9E-08 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | BENZO(A)PYRENE | 5.4E-10 | mg/m3 | 7.4E-11 | mg/m3 | 2.0E-06 | mg/m3 | 3.7E-05 |
| | | | Inhalation | BENZO(B)FLUORANTHENE | 6.2E-10 | mg/m3 | 8.5E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | BENZO(K)FLUORANTHENE | 5.7E-10 | mg/m3 | 7.8E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | DIBENZO(A,H)ANTHRACENE | 9.2E-11 | mg/m3 | 1.3E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | INDENO(1,2,3-CD)PYRENE | 2.4E-10 | mg/m3 | 3.3E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | NAPHTHALENE | 4.5E-06 | mg/m3 | 6.1E-07 | mg/m3 | 3.0E-03 | mg/m3 | 2.0E-04 |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **1.1E-01** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | HC | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 8.3E+03 | mg/kg | 2.3E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 2.3E-03 |
| | | | Ingestion | ANTIMONY | 2.5E+00 | mg/kg | 6.7E-07 | mg/kg-d | 4.0E-04 | mg/kg-d | 1.7E-03 |
| | | | Ingestion | ARSENIC | 3.9E+02 | mg/kg | 6.3E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.1E-01 |
| | | | Ingestion | BARIUM | 1.0E+03 | mg/kg | 2.7E-04 | mg/kg-d | 2.0E-01 | mg/kg-d | 1.4E-03 |
| | | | Ingestion | CADMIUM | 4.5E+00 | mg/kg | 1.2E-06 | mg/kg-d | 1.0E-03 | mg/kg-d | 1.2E-03 |
| | | | Ingestion | CHROMIUM | 2.2E+01 | mg/kg | 6.0E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 2.0E-03 |
| | | | Ingestion | COBALT | 5.0E+00 | mg/kg | 1.4E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.5E-03 |
| | | | Ingestion | COPPER | 1.7E+02 | mg/kg | 4.6E-05 | mg/kg-d | 4.0E-02 | mg/kg-d | 1.2E-03 |
| | | | Ingestion | CYANIDE | 4.8E+01 | mg/kg | 1.3E-05 | mg/kg-d | 6.0E-04 | mg/kg-d | 2.2E-02 |
| | | | Ingestion | IRON | 1.7E+04 | mg/kg | 4.7E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 6.7E-03 |
| | | | Ingestion | LEAD | 2.9E+03 | mg/kg | 7.8E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 8.1E+01 | mg/kg | 2.2E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 9.2E-04 |
| | | | Ingestion | NICKEL | 3.3E+01 | mg/kg | 9.1E-06 | mg/kg-d | 2.0E-02 | mg/kg-d | 4.5E-04 |
| | | | Ingestion | THALLIUM | 1.6E+00 | mg/kg | 4.5E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 4.5E-02 |
| | | | Ingestion | VANADIUM | 2.4E+01 | mg/kg | 6.6E-06 | mg/kg-d | 5.0E-03 | mg/kg-d | 1.3E-03 |
| | | | Ingestion | ZINC | 4.9E+02 | mg/kg | 1.3E-04 | mg/kg-d | 3.0E-01 | mg/kg-d | 4.4E-04 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.4E-01 | mg/kg | 3.7E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.8E-03 |
| | | | Ingestion | AROCLOR-1260 | 5.8E-02 | mg/kg | 1.6E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 7.9E-04 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 7.1E-01 | mg/kg | 1.9E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 7.0E-01 | mg/kg | 1.9E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 6.3E-04 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 9.5E-01 | mg/kg | 2.6E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.9E-01 | mg/kg | 5.1E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 3.9E-01 | mg/kg | 1.1E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **3.0E-01** |
| Sediment | Sediment | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 8.3E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 2.5E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 3.9E+02 | mg/kg | 2.9E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 9.7E-02 |
| | | | Dermal | BARIUM | 1.0E+03 | mg/kg | NA | mg/kg-d | 1.4E-02 | mg/kg-d | NA |
| | | | Dermal | CADMIUM | 4.5E+00 | mg/kg | 1.1E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 4.6E-04 |
| | | | Dermal | CHROMIUM | 2.2E+01 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 5.0E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.7E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 4.8E+01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 1.7E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 2.9E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 8.1E+01 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | NICKEL | 3.3E+01 | mg/kg | NA | mg/kg-d | 8.0E-04 | mg/kg-d | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | HC | Dermal | THALLIUM | 1.6E+00 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 2.4E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | ZINC | 4.9E+02 | mg/kg | NA | mg/kg-d | 3.0E-01 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.4E-01 | mg/kg | 4.8E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 2.4E-03 |
| | | | Dermal | AROCLOR-1260 | 5.8E-02 | mg/kg | 2.0E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.0E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 7.1E-01 | mg/kg | 2.3E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 7.0E-01 | mg/kg | 2.3E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.6E-04 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 9.5E-01 | mg/kg | 3.1E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.9E-01 | mg/kg | 6.2E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 3.9E-01 | mg/kg | 1.3E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **1.0E-01** |
| Surface Water | Surface Water | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 6.2E+00 | mg/L | 7.8E-05 | mg/kg-d | 1.0E+00 | mg/kg-d | 7.8E-05 |
| | | | Dermal | ANTIMONY | 3.4E-03 | mg/L | 4.2E-08 | mg/kg-d | 6.0E-05 | mg/kg-d | 7.0E-04 |
| | | | Dermal | ARSENIC | 1.1E-01 | mg/L | 1.4E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.5E-03 |
| | | | Dermal | BARIUM | 4.5E-01 | mg/L | 5.7E-06 | mg/kg-d | 1.4E-02 | mg/kg-d | 4.1E-04 |
| | | | Dermal | CADMIUM | 2.5E-03 | mg/L | 3.1E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 1.3E-03 |
| | | | Dermal | CHROMIUM | 1.2E-01 | mg/L | 1.5E-06 | mg/kg-d | 7.5E-05 | mg/kg-d | 2.0E-02 |
| | | | Dermal | COBALT | 2.7E-03 | mg/L | 1.4E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.6E-05 |
| | | | Dermal | COPPER | 2.8E-02 | mg/L | 3.6E-07 | mg/kg-d | 4.0E-02 | mg/kg-d | 8.9E-06 |
| | | | Dermal | CYANIDE | 8.6E-03 | mg/L | 1.1E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.8E-04 |
| | | | Dermal | IRON | 1.4E+01 | mg/L | 1.7E-04 | mg/kg-d | 7.0E-01 | mg/kg-d | 2.5E-04 |
| | | | Dermal | LEAD | 2.4E-01 | mg/L | 3.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.6E-01 | mg/L | 2.1E-06 | mg/kg-d | 9.6E-04 | mg/kg-d | 2.1E-03 |
| | | | Dermal | MERCURY | 2.0E-04 | mg/L | 2.6E-09 | mg/kg-d | 2.1E-05 | mg/kg-d | 1.2E-04 |
| | | | Dermal | THALLIUM | 5.4E-03 | mg/L | 6.8E-08 | mg/kg-d | 1.0E-05 | mg/kg-d | 6.8E-03 |
| | | | Dermal | VANADIUM | 5.1E-03 | mg/L | 6.4E-08 | mg/kg-d | 1.3E-04 | mg/kg-d | 5.0E-04 |
| | | | Dermal | ZINC | 4.8E-01 | mg/L | 3.6E-06 | mg/kg-d | 3.0E-01 | mg/kg-d | 1.2E-05 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **3.7E-02** |
| **Exposure Point Total (HC)** | | | | | | | | | | | **2E+00** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 4.6E+03 | mg/kg | 4.3E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 4.3E-03 |
| | | | Ingestion | ANTIMONY | 3.6E+00 | mg/kg | 3.4E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 8.4E-03 |
| | | | Ingestion | ARSENIC | 8.4E+00 | mg/kg | 4.7E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.6E-02 |
| | | | Ingestion | CHROMIUM | 9.2E-01 | mg/kg | 8.5E-07 | mg/kg-d | 3.0E-03 | mg/kg-d | 2.8E-04 |
| | | | Ingestion | COBALT | 8.7E-01 | mg/kg | 8.1E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.7E-03 |
| | | | Ingestion | CYANIDE | 3.7E-01 | mg/kg | 3.4E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 5.7E-04 |
| | | | Ingestion | IRON | 7.8E+03 | mg/kg | 7.3E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.0E-02 |
| | | | Ingestion | LEAD | 2.1E+02 | mg/kg | 2.0E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | THALLIUM | 4.4E-01 | mg/kg | 4.1E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 4.1E-02 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 1.3E-01 | mg/kg | 1.2E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.9E-04 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.6E-01 | mg/kg | 2.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **8.3E-02** |
| Soil | Soil (0-2 ft bgs) | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 4.6E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 3.6E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 8.4E+00 | mg/kg | 7.6E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.5E-03 |
| | | | Dermal | CHROMIUM | 9.2E-01 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 8.7E-01 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 3.7E-01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 7.8E+03 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 2.1E+02 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 4.4E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 1.3E-01 | mg/kg | 5.0E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.7E-04 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.6E-01 | mg/kg | 1.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **2.7E-03** |
| Soil | Particulates in Air | KWL | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 1.4E-06 | mg/m3 | 1.9E-07 | mg/m3 | 5.0E-03 | mg/m3 | 3.9E-05 |
| | | | Inhalation | ANTIMONY | 1.1E-09 | mg/m3 | 1.5E-10 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | ARSENIC | 2.6E-09 | mg/m3 | 3.6E-10 | mg/m3 | 1.5E-05 | mg/m3 | 2.4E-05 |
| | | | Inhalation | CHROMIUM | 2.9E-10 | mg/m3 | 3.9E-11 | mg/m3 | 1.0E-04 | mg/m3 | 3.9E-07 |
| | | | Inhalation | COBALT | 2.7E-10 | mg/m3 | 3.7E-11 | mg/m3 | 6.0E-06 | mg/m3 | 6.1E-06 |
| | | | Inhalation | CYANIDE | 4.9E-06 | mg/m3 | 6.7E-07 | mg/m3 | 8.0E-04 | mg/m3 | 8.4E-04 |
| | | | Inhalation | IRON | 2.4E-06 | mg/m3 | 3.3E-07 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | LEAD | 6.6E-08 | mg/m3 | 9.0E-09 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | THALLIUM | 1.4E-10 | mg/m3 | 1.9E-11 | mg/m3 | NA | mg/m3 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Particulates in Air | KWL | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)PYRENE | 3.9E-11 | mg/m3 | 5.4E-12 | mg/m3 | 2.0E-06 | mg/m3 | 2.7E-06 |
| | | | Inhalation | BENZO(B)FLUORANTHENE | 7.9E-11 | mg/m3 | 1.1E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **9.1E-04** |
| Sediment | Sediment | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.6E+04 | mg/kg | 4.4E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 4.4E-03 |
| | | | Ingestion | ANTIMONY | 2.0E+00 | mg/kg | 5.5E-07 | mg/kg-d | 4.0E-04 | mg/kg-d | 1.4E-03 |
| | | | Ingestion | ARSENIC | 8.8E+01 | mg/kg | 1.4E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.8E-02 |
| | | | Ingestion | CADMIUM | 7.7E+00 | mg/kg | 2.1E-06 | mg/kg-d | 1.0E-03 | mg/kg-d | 2.1E-03 |
| | | | Ingestion | CHROMIUM | 8.6E+00 | mg/kg | 2.3E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 7.8E-04 |
| | | | Ingestion | COBALT | 8.6E+00 | mg/kg | 2.3E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.8E-03 |
| | | | Ingestion | COPPER | 2.1E+02 | mg/kg | 5.7E-05 | mg/kg-d | 4.0E-02 | mg/kg-d | 1.4E-03 |
| | | | Ingestion | CYANIDE | 4.1E+00 | mg/kg | 1.1E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.9E-03 |
| | | | Ingestion | IRON | 2.7E+04 | mg/kg | 7.2E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.0E-02 |
| | | | Ingestion | LEAD | 1.0E+03 | mg/kg | 2.8E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.4E+02 | mg/kg | 3.9E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 1.6E-03 |
| | | | Ingestion | NICKEL | 3.7E+01 | mg/kg | 1.0E-05 | mg/kg-d | 2.0E-02 | mg/kg-d | 5.0E-04 |
| | | | Ingestion | THALLIUM | 4.7E-01 | mg/kg | 1.3E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 1.3E-02 |
| | | | Ingestion | VANADIUM | 2.6E+01 | mg/kg | 7.1E-06 | mg/kg-d | 5.0E-03 | mg/kg-d | 1.4E-03 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.6E-01 | mg/kg | 4.5E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 2.2E-03 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 3.1E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 2.9E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 9.7E-04 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 3.8E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 3.3E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 4.4E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 1.1E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **9.7E-02** |
| Sediment | Sediment | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.6E+04 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 2.0E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 8.8E+01 | mg/kg | 6.7E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.2E-02 |
| | | | Dermal | CADMIUM | 7.7E+00 | mg/kg | 1.9E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 7.8E-04 |
| | | | Dermal | CHROMIUM | 8.6E+00 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 8.6E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 2.1E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 4.1E+00 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 2.7E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | KWL | Dermal | LEAD | 1.0E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.4E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | NICKEL | 3.7E+01 | mg/kg | NA | mg/kg-d | 8.0E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 4.7E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 2.6E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.6E-01 | mg/kg | 5.8E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 2.9E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 3.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 3.5E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.2E-03 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 4.5E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 4.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 5.3E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 1.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **2.7E-02** |
| Surface Water | Surface Water | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.4E+00 | mg/L | 1.7E-05 | mg/kg-d | 1.0E+00 | mg/kg-d | 1.7E-05 |
| | | | Dermal | ANTIMONY | 3.7E-03 | mg/L | 4.7E-08 | mg/kg-d | 6.0E-05 | mg/kg-d | 7.8E-04 |
| | | | Dermal | ARSENIC | 1.7E-02 | mg/L | 2.1E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.0E-04 |
| | | | Dermal | CHROMIUM | 5.3E-03 | mg/L | 6.7E-08 | mg/kg-d | 7.5E-05 | mg/kg-d | 9.0E-04 |
| | | | Dermal | COBALT | 1.6E-03 | mg/L | 8.1E-09 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.7E-05 |
| | | | Dermal | CYANIDE | 1.8E-03 | mg/L | 2.3E-08 | mg/kg-d | 6.0E-04 | mg/kg-d | 3.8E-05 |
| | | | Dermal | IRON | 3.6E+00 | mg/L | 4.5E-05 | mg/kg-d | 7.0E-01 | mg/kg-d | 6.5E-05 |
| | | | Dermal | LEAD | 2.9E-02 | mg/L | 3.7E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 8.0E-02 | mg/L | 1.0E-06 | mg/kg-d | 9.6E-04 | mg/kg-d | 1.0E-03 |
| | | | Dermal | THALLIUM | 5.8E-03 | mg/L | 7.3E-08 | mg/kg-d | 1.0E-05 | mg/kg-d | 7.3E-03 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1.1E-02** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **2E-01** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for chromium(VI).

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |

**Ingestion - Soil**

$$\text{Intake Factor (IF)} = \frac{IR \times FS \times EF \times ED \times CF}{BW \times AT}$$

| | | | |
|---|---|---|---|
| = | 9.3E-07 (Adolescent) | $Intake_{ing}(mg/kg{\cdot}d) = EPC_{soil} * IF * B$ | |
| | | (B) presented in Table 5.1 | |
| | | Non-cancer Hazard = Intake/RfD | |

| | | |
|---|---|---|
| IR | Ingestion Rate (mg/day) | 100 |
| FS | Fraction from Contaminated Source | 1 |
| EF | Soil Ingestion Exposure Frequency (days/year) | 150 |
| ED | Soil Ingestion Exposure Duration (years) | 10 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 44 |
| AT | Averaging Time (days) | 3,650 |

**Dermal - Soil**

$$\text{Intake Factor (IF)} = \frac{SA \times AF \times EF \times ED \times CF}{BW \times AT}$$

| | | | |
|---|---|---|---|
| = | 3.0E-06 (Adolescent) | $Intake_{derm}(mg/kg{\cdot}d) = EPC_{soil} * IF * ABS$ | |
| | | (ABS) presented in Table 5.1 | |
| | | Non-cancer Hazard = Intake/RfD | |

| | | |
|---|---|---|
| SA | Surface Area Exposed to Soil ($cm^2$/day) | 4,639 |
| AF | Soil Skin Adherence Factor ($mg/cm^2$) | 0.07 |
| EF | Soil Dermal Exposure Frequency (days/year) | 150 |
| ED | Soil Dermal Exposure Duration (years) | 10 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 44 |
| AT | Averaging Time (days) | 3,650 |

**Inhalation - Soil**

$$\text{Intake Factor (IF)} = \frac{EF \times ED \times ET \times CF}{AT}$$

| | | | |
|---|---|---|---|
| = | 1.4E-01 (Adolescent) | $EPC_{air} = EPC_{soil}$ x [1/Volatilization Factor (VF) + 1/Particulate Emissions Factor (PEF)] | |
| | | Exposure = $EPC_{air}$ x IF | |
| | | Non-cancer Hazard = Exposure/RfC | |

| | | |
|---|---|---|
| EF | Soil Exposure Frequency (days/year) | 150 |
| ED | Soil Exposure Duration (years) | 10 |
| ET | Soil Exposure Time (hours/day) | 8 |
| CF | Conversion Factor (days/hours) | 0.042 |
| AT | Averaging Time (days) | 3,650 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC Value | EPC Units | Non-cancer Hazard Calculations: Intake/Exposure Value | Intake/Exposure Units | RfD/RfC Value | RfD/RfC Units | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|

**Ingestion - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{IR \times FS \times EF \times ED \times CF}{BW \times AT}$$ = 2.7E-07 (Adolescent)

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{sediment} * IF * B$

(B) presented in Table 5.1

Non-cancer Hazard = Intake/RfD

| | | |
|---|---|---|
| IR | Ingestion Rate (mg/day) | 100 |
| FS | Fraction from Contaminated Source | 1 |
| EF | Sediment Ingestion Exposure Frequency (days/year) | 44 |
| ED | Sediment Ingestion Exposure Duration (years) | 10 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 44 |
| AT | Averaging Time (days) | 3,650 |

**Dermal - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{SA \times AF \times EF \times ED \times CF}{BW \times AT}$$ = 2.5E-06 (Adolescent)

$Intake_{derm}(mg/kg{\cdot}d) = EPC_{sediment} * IF * ABS$

(ABS) presented in Table 5.1

Non-cancer Hazard = Intake/RfD

| | | |
|---|---|---|
| SA | Surface Area Exposed to Sediment ($cm^2$/day) | 4,639 |
| AF | Sediment Skin Adherence Factor ($mg/cm^2$) | 0.2 |
| EF | Sediment Dermal Exposure Frequency (days/year) | 44 |
| ED | Sediment Dermal Exposure Duration (years) | 10 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 44 |
| AT | Averaging Time (days) | 3,650 |

**Dermal - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{SA \times EV \times EF \times ED}{BW \times AT}$$ = 1.3E+01 (Adolescent)

$Intake_{derm}(mg/kg{\cdot}d) = IF \times Absorbed\ Dose\ per\ Event\ (DA_{Event})$

$(DA_{event})$ presented in Table 4.6

Non-cancer Hazard = Intake/RfD

| | | |
|---|---|---|
| SA | Surface Area Exposed to Surface Water ($cm^2$) | 4,639 |
| EF | Surface Water Dermal Exposure Frequency (days/year) | 44 |
| ED | Surface Water Dermal Exposure Duration (years) | 10 |
| EV | Events per Day (events/day) | 1 |
| BW | Body Weight (kg) | 44 |
| AT | Averaging Time (days) | 3,650 |

**Table 7.12**
**Calculation of Chemical Non-cancer Hazards for Recreator**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.0E+03 | mg/kg | 4.8E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 4.8E-03 |
| | | | Ingestion | ANTIMONY | 2.3E+00 | mg/kg | 3.6E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 9.1E-03 |
| | | | Ingestion | ARSENIC | 9.8E+00 | mg/kg | 9.5E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.2E-02 |
| | | | Ingestion | CHROMIUM | 8.0E-01 | mg/kg | 1.3E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 4.3E-04 |
| | | | Ingestion | COBALT | 6.2E+00 | mg/kg | 9.9E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.3E-02 |
| | | | Ingestion | COPPER | 1.0E+02 | mg/kg | 1.6E-04 | mg/kg-d | 4.0E-02 | mg/kg-d | 4.1E-03 |
| | | | Ingestion | CYANIDE | 2.7E+00 | mg/kg | 4.3E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 7.2E-03 |
| | | | Ingestion | IRON | 8.0E+03 | mg/kg | 1.3E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.8E-02 |
| | | | Ingestion | LEAD | 1.7E+02 | mg/kg | 2.7E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 1.8E-04 | mg/kg-d | 2.4E-02 | mg/kg-d | 7.3E-03 |
| | | | Ingestion | THALLIUM | 8.6E-01 | mg/kg | 1.4E-06 | mg/kg-d | 1.0E-05 | mg/kg-d | 1.4E-01 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 6.5E-02 | mg/kg | 1.0E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 5.2E-03 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 3.2E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 2.4E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.8E-02 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 4.7E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 1.0E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | CHRYSENE | 3.0E+01 | mg/kg | 4.8E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 2.4E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 6.5E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | **TICs** | | | | | | | |
| | | | Ingestion | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 1.9E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **3.4E-01** |
| Sediment | Sediment | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.0E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 2.3E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 9.8E+00 | mg/kg | 1.1E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.8E-03 |
| | | | Dermal | CHROMIUM | 8.0E-01 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 6.2E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.0E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 2.7E+00 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 8.0E+03 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.7E+02 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 8.6E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 6.5E-02 | mg/kg | 3.5E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.7E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 9.8E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 7.3E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.4E-02 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 1.5E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 3.1E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | CHRYSENE | 3.0E+01 | mg/kg | 1.5E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 7.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 2.0E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | **TICs** | | | | | | | |
| | | | Dermal | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 6.0E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **3.0E-02** |
| Surface Water | Surface Water | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ARSENIC | 7.8E-03 | mg/L | 1.5E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.0E-04 |
| | | | Dermal | CHROMIUM | 2.6E-03 | mg/L | 4.9E-08 | mg/kg-d | 7.5E-05 | mg/kg-d | 6.5E-04 |
| | | | Dermal | COBALT | 2.1E-03 | mg/L | 1.6E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.4E-05 |
| | | | Dermal | CYANIDE | 4.4E-03 | mg/L | 8.5E-08 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.4E-04 |
| | | | Dermal | IRON | 1.1E+01 | mg/L | 2.2E-04 | mg/kg-d | 7.0E-01 | mg/kg-d | 3.1E-04 |
| | | | Dermal | MANGANESE | 9.5E-01 | mg/L | 1.8E-05 | mg/kg-d | 9.6E-04 | mg/kg-d | 1.9E-02 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 2.8E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 2.0E-04 | mg/L | 1.3E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.2E-02 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 4.9E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 3.5E-04 | mg/kg-d | 2.0E-02 | mg/kg-d | 1.7E-02 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 4.1E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 6.7E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **8.0E-02** |
| **Exposure Point Total (SL)** | | | | | | | | | | | **4E-01** |
| Soil | Soil (0-2 ft bgs) | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.8E+03 | mg/kg | 2.1E-02 | mg/kg-d | 1.0E+00 | mg/kg-d | 2.1E-02 |
| | | | Ingestion | ANTIMONY | 1.4E+00 | mg/kg | 7.8E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 1.9E-02 |
| | | | Ingestion | ARSENIC | 1.1E+02 | mg/kg | 3.8E-04 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.3E+00 |
| | | | Ingestion | CADMIUM | 2.3E+00 | mg/kg | 1.3E-05 | mg/kg-d | 1.0E-03 | mg/kg-d | 1.3E-02 |
| | | | Ingestion | CHROMIUM | 2.0E+00 | mg/kg | 1.1E-05 | mg/kg-d | 3.0E-03 | mg/kg-d | 3.7E-03 |
| | | | Ingestion | COBALT | 1.1E+00 | mg/kg | 6.0E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.0E-02 |
| | | | Ingestion | CYANIDE | 6.0E-01 | mg/kg | 3.3E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 5.5E-03 |
| | | | Ingestion | IRON | 6.3E+03 | mg/kg | 3.4E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 4.9E-02 |
| | | | Ingestion | LEAD | 1.9E+02 | mg/kg | 1.0E-03 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | THALLIUM | 8.5E-01 | mg/kg | 4.7E-06 | mg/kg-d | 1.0E-05 | mg/kg-d | 4.7E-01 |
| | | | Ingestion | VANADIUM | 1.2E+01 | mg/kg | 6.8E-05 | mg/kg-d | 5.0E-03 | mg/kg-d | 1.4E-02 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | BWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E-01 | mg/kg | 7.4E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.5E-03 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **1.9E+00** |
| Soil | Soil (0-2 ft bgs) | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.8E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 1.4E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 1.1E+02 | mg/kg | 4.5E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.5E-01 |
| | | | Dermal | CADMIUM | 2.3E+00 | mg/kg | 3.0E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 1.2E-03 |
| | | | Dermal | CHROMIUM | 2.0E+00 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 1.1E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 6.0E-01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 6.3E+03 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.9E+02 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 8.5E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 1.2E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 1.4E-01 | mg/kg | 2.3E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.6E-04 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **1.5E-01** |
| Soil | Particulates in Air | BWL | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 1.2E-06 | mg/m3 | 1.6E-07 | mg/m3 | 5.0E-03 | mg/m3 | 3.2E-05 |
| | | | Inhalation | ANTIMONY | 4.4E-10 | mg/m3 | 6.0E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | ARSENIC | 3.6E-08 | mg/m3 | 4.9E-09 | mg/m3 | 1.5E-05 | mg/m3 | 3.2E-04 |
| | | | Inhalation | CADMIUM | 7.1E-10 | mg/m3 | 9.7E-11 | mg/m3 | 1.0E-05 | mg/m3 | 9.7E-06 |
| | | | Inhalation | CHROMIUM | 6.2E-10 | mg/m3 | 8.5E-11 | mg/m3 | 1.0E-04 | mg/m3 | 8.5E-07 |
| | | | Inhalation | COBALT | 3.4E-10 | mg/m3 | 4.6E-11 | mg/m3 | 6.0E-06 | mg/m3 | 7.7E-06 |
| | | | Inhalation | CYANIDE | 7.9E-06 | mg/m3 | 1.1E-06 | mg/m3 | 8.0E-04 | mg/m3 | 1.4E-03 |
| | | | Inhalation | IRON | 1.9E-06 | mg/m3 | 2.7E-07 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | LEAD | 5.8E-08 | mg/m3 | 7.9E-09 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | THALLIUM | 2.6E-10 | mg/m3 | 3.6E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | VANADIUM | 3.9E-09 | mg/m3 | 5.3E-10 | mg/m3 | 1.0E-04 | mg/m3 | 5.3E-06 |
| | | | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)PYRENE | 4.2E-11 | mg/m3 | 5.7E-12 | mg/m3 | 2.0E-06 | mg/m3 | 2.9E-06 |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **1.7E-03** |
| Sediment | Sediment | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.5E+04 | mg/kg | 2.4E-02 | mg/kg-d | 1.0E+00 | mg/kg-d | 2.4E-02 |
| | | | Ingestion | ANTIMONY | 7.3E+00 | mg/kg | 1.2E-05 | mg/kg-d | 4.0E-04 | mg/kg-d | 2.9E-02 |
| | | | Ingestion | ARSENIC | 2.8E+02 | mg/kg | 2.7E-04 | mg/kg-d | 3.0E-04 | mg/kg-d | 9.1E-01 |
| | | | Ingestion | CADMIUM | 1.3E+01 | mg/kg | 2.1E-05 | mg/kg-d | 1.0E-03 | mg/kg-d | 2.1E-02 |
| | | | Ingestion | CHROMIUM | 7.8E+00 | mg/kg | 1.2E-05 | mg/kg-d | 3.0E-03 | mg/kg-d | 4.2E-03 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Ingestion | COBALT | 1.7E+01 | mg/kg | 2.7E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 9.0E-02 |
| | | | Ingestion | COPPER | 1.8E+02 | mg/kg | 2.8E-04 | mg/kg-d | 4.0E-02 | mg/kg-d | 7.1E-03 |
| | | | Ingestion | CYANIDE | 1.5E+01 | mg/kg | 2.4E-05 | mg/kg-d | 6.0E-04 | mg/kg-d | 4.1E-02 |
| | | | Ingestion | IRON | 4.2E+04 | mg/kg | 6.8E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 9.7E-02 |
| | | | Ingestion | LEAD | 1.5E+03 | mg/kg | 2.4E-03 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 1.8E-04 | mg/kg-d | 2.4E-02 | mg/kg-d | 7.3E-03 |
| | | | Ingestion | VANADIUM | 5.6E+01 | mg/kg | 9.0E-05 | mg/kg-d | 5.0E-03 | mg/kg-d | 1.8E-02 |
| | | | Ingestion | ZINC | 1.1E+03 | mg/kg | 1.8E-03 | mg/kg-d | 3.0E-01 | mg/kg-d | 6.0E-03 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 8.0E-02 | mg/kg | 1.3E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 6.4E-03 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 2.2E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 2.2E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.3E-03 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 3.3E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 3.1E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 4.6E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 1.2E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | NAPHTHALENE | 2.8E+00 | mg/kg | 4.6E-06 | mg/kg-d | 2.0E-02 | mg/kg-d | 2.3E-04 |
| | | | Ingestion | **VOCs** | | | | | | | |
| | | | Ingestion | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | 1.1E-07 | mg/kg-d | 5.0E-04 | mg/kg-d | 2.1E-04 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **1.3E+00** |
| Sediment | Sediment | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.5E+04 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 7.3E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 2.8E+02 | mg/kg | 3.2E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.1E-01 |
| | | | Dermal | CADMIUM | 1.3E+01 | mg/kg | 5.1E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 2.0E-03 |
| | | | Dermal | CHROMIUM | 7.8E+00 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 1.7E+01 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.8E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 1.5E+01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 4.2E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.5E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 5.6E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | ZINC | 1.1E+03 | mg/kg | NA | mg/kg-d | 3.0E-01 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 8.0E-02 | mg/kg | 4.3E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 2.1E-03 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 6.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 6.8E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.3E-03 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 1.0E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 9.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 1.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 3.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | NAPHTHALENE | 2.8E+00 | mg/kg | 1.4E-06 | mg/kg-d | 2.0E-02 | mg/kg-d | 7.1E-05 |
| | | | Dermal | **VOCs** | | | | | | | |
| | | | Dermal | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | NA | mg/kg-d | 5.0E-04 | mg/kg-d | NA |
| | | | Dermal | **TICs** | | | | | | | |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **1.1E-01** |
| Surface Water | Surface Water | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.3E+00 | mg/L | 2.5E-05 | mg/kg-d | 1.0E+00 | mg/kg-d | 2.5E-05 |
| | | | Dermal | ANTIMONY | 1.2E-03 | mg/L | 2.2E-08 | mg/kg-d | 6.0E-05 | mg/kg-d | 3.7E-04 |
| | | | Dermal | ARSENIC | 3.1E-02 | mg/L | 5.8E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.9E-03 |
| | | | Dermal | CADMIUM | 6.2E-04 | mg/L | 1.2E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 4.7E-04 |
| | | | Dermal | CHROMIUM | 4.5E-03 | mg/L | 8.5E-08 | mg/kg-d | 7.5E-05 | mg/kg-d | 1.1E-03 |
| | | | Dermal | COBALT | 1.0E-03 | mg/L | 7.7E-09 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.6E-05 |
| | | | Dermal | CYANIDE | 2.0E-03 | mg/L | 3.8E-08 | mg/kg-d | 6.0E-04 | mg/kg-d | 6.4E-05 |
| | | | Dermal | IRON | 6.5E+00 | mg/L | 1.2E-04 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.8E-04 |
| | | | Dermal | LEAD | 2.6E-02 | mg/L | 4.9E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 7.0E-02 | mg/L | 1.3E-06 | mg/kg-d | 9.6E-04 | mg/kg-d | 1.4E-03 |
| | | | Dermal | THALLIUM | 1.2E-03 | mg/L | 2.4E-08 | mg/kg-d | 1.0E-05 | mg/kg-d | 2.4E-03 |
| | | | Dermal | VANADIUM | 2.5E-03 | mg/L | 4.7E-08 | mg/kg-d | 1.3E-04 | mg/kg-d | 3.6E-04 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 3.4E-05 | mg/L | 2.1E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.1E-03 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1.5E-02** |
| **Exposure Point Total (BWL)** | | | | | | | | | | | **3E+00** |
| Soil | Soil (0-2 ft bgs) | HC | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 9.2E+03 | mg/kg | 5.0E-02 | mg/kg-d | 1.0E+00 | mg/kg-d | 5.0E-02 |
| | | | Ingestion | ANTIMONY | 5.3E+00 | mg/kg | 2.9E-05 | mg/kg-d | 4.0E-04 | mg/kg-d | 7.3E-02 |
| | | | Ingestion | ARSENIC | 5.0E+02 | mg/kg | 1.6E-03 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.4E+00 |
| | | | Ingestion | BARIUM | 1.9E+03 | mg/kg | 1.1E-02 | mg/kg-d | 2.0E-01 | mg/kg-d | 5.3E-02 |
| | | | Ingestion | CADMIUM | 2.9E+00 | mg/kg | 1.6E-05 | mg/kg-d | 1.0E-03 | mg/kg-d | 1.6E-02 |
| | | | Ingestion | CHROMIUM | 3.2E+01 | mg/kg | 1.8E-04 | mg/kg-d | 3.0E-03 | mg/kg-d | 5.9E-02 |
| | | | Ingestion | COBALT | 6.3E+00 | mg/kg | 3.5E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.2E-01 |
| | | | Ingestion | COPPER | 1.4E+02 | mg/kg | 7.8E-04 | mg/kg-d | 4.0E-02 | mg/kg-d | 2.0E-02 |
| | | | Ingestion | CYANIDE | 4.9E+01 | mg/kg | 2.7E-04 | mg/kg-d | 6.0E-04 | mg/kg-d | 4.5E-01 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | HC | Ingestion | IRON | 2.8E+04 | mg/kg | 1.5E-01 | mg/kg-d | 7.0E-01 | mg/kg-d | 2.2E-01 |
| | | | Ingestion | LEAD | 3.3E+03 | mg/kg | 1.8E-02 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 3.4E+02 | mg/kg | 1.9E-03 | mg/kg-d | 2.4E-02 | mg/kg-d | 7.7E-02 |
| | | | Ingestion | MERCURY | 7.7E-01 | mg/kg | 4.2E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.4E-02 |
| | | | Ingestion | NICKEL | 1.4E+01 | mg/kg | 7.5E-05 | mg/kg-d | 2.0E-02 | mg/kg-d | 3.7E-03 |
| | | | Ingestion | THALLIUM | 6.6E-01 | mg/kg | 3.6E-06 | mg/kg-d | 1.0E-05 | mg/kg-d | 3.6E-01 |
| | | | Ingestion | VANADIUM | 3.0E+01 | mg/kg | 1.7E-04 | mg/kg-d | 5.0E-03 | mg/kg-d | 3.3E-02 |
| | | | Ingestion | ZINC | 5.3E+02 | mg/kg | 2.9E-03 | mg/kg-d | 3.0E-01 | mg/kg-d | 9.7E-03 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 5.5E-02 | mg/kg | 3.0E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.5E-02 |
| | | | Ingestion | AROCLOR-1260 | 1.7E-01 | mg/kg | 9.0E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 4.5E-02 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.6E+00 | mg/kg | 8.7E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.8E+00 | mg/kg | 9.6E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.2E-02 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 1.1E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.8E+00 | mg/kg | 1.0E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 3.0E-01 | mg/kg | 1.6E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.7E-01 | mg/kg | 4.2E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | NAPHTHALENE | 2.7E-01 | mg/kg | 1.5E-06 | mg/kg-d | 2.0E-02 | mg/kg-d | 7.3E-05 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **7.1E+00** |
| Soil | Soil (0-2 ft bgs) | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 9.2E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 5.3E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 5.0E+02 | mg/kg | 1.9E-04 | mg/kg-d | 3.0E-04 | mg/kg-d | 6.5E-01 |
| | | | Dermal | BARIUM | 1.9E+03 | mg/kg | NA | mg/kg-d | 1.4E-02 | mg/kg-d | NA |
| | | | Dermal | CADMIUM | 2.9E+00 | mg/kg | 3.8E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 1.5E-03 |
| | | | Dermal | CHROMIUM | 3.2E+01 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 6.3E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.4E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 4.9E+01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 2.8E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 3.3E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 3.4E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | MERCURY | 7.7E-01 | mg/kg | NA | mg/kg-d | 2.1E-05 | mg/kg-d | NA |
| | | | Dermal | NICKEL | 1.4E+01 | mg/kg | NA | mg/kg-d | 8.0E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 6.6E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 3.0E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | ZINC | 5.3E+02 | mg/kg | NA | mg/kg-d | 3.0E-01 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 5.5E-02 | mg/kg | 1.0E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 5.0E-03 |
| | | | Dermal | AROCLOR-1260 | 1.7E-01 | mg/kg | 3.0E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.5E-02 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | HC | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.6E+00 | mg/kg | 2.7E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.8E+00 | mg/kg | 3.0E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 9.9E-03 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 3.4E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.8E+00 | mg/kg | 3.1E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 3.0E-01 | mg/kg | 5.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.7E-01 | mg/kg | 1.3E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | NAPHTHALENE | 2.7E-01 | mg/kg | 4.5E-07 | mg/kg-d | 2.0E-02 | mg/kg-d | 2.2E-05 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **6.8E-01** |
| Soil | Particulates in Air | HC | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 2.8E-06 | mg/m3 | 3.9E-07 | mg/m3 | 5.0E-03 | mg/m3 | 7.8E-05 |
| | | | Inhalation | ANTIMONY | 1.6E-09 | mg/m3 | 2.3E-10 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | ARSENIC | 1.5E-07 | mg/m3 | 2.1E-08 | mg/m3 | 1.5E-05 | mg/m3 | 1.4E-03 |
| | | | Inhalation | BARIUM | 6.0E-07 | mg/m3 | 8.2E-08 | mg/m3 | 5.0E-04 | mg/m3 | 1.6E-04 |
| | | | Inhalation | CADMIUM | 9.0E-10 | mg/m3 | 1.2E-10 | mg/m3 | 1.0E-05 | mg/m3 | 1.2E-05 |
| | | | Inhalation | CHROMIUM | 9.9E-09 | mg/m3 | 1.4E-09 | mg/m3 | 1.0E-04 | mg/m3 | 1.4E-05 |
| | | | Inhalation | COBALT | 1.9E-09 | mg/m3 | 2.7E-10 | mg/m3 | 6.0E-06 | mg/m3 | 4.4E-05 |
| | | | Inhalation | COPPER | 4.4E-08 | mg/m3 | 6.0E-09 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | CYANIDE | 6.5E-04 | mg/m3 | 8.9E-05 | mg/m3 | 8.0E-04 | mg/m3 | 1.1E-01 |
| | | | Inhalation | IRON | 8.5E-06 | mg/m3 | 1.2E-06 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | LEAD | 1.0E-06 | mg/m3 | 1.4E-07 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | MANGANESE | 1.0E-07 | mg/m3 | 1.4E-08 | mg/m3 | 5.0E-05 | mg/m3 | 2.9E-04 |
| | | | Inhalation | MERCURY | 2.4E-10 | mg/m3 | 3.3E-11 | mg/m3 | 3.0E-04 | mg/m3 | 1.1E-07 |
| | | | Inhalation | NICKEL | 4.2E-09 | mg/m3 | 5.8E-10 | mg/m3 | 9.0E-05 | mg/m3 | 6.4E-06 |
| | | | Inhalation | THALLIUM | 2.0E-10 | mg/m3 | 2.8E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | VANADIUM | 9.4E-09 | mg/m3 | 1.3E-09 | mg/m3 | 1.0E-04 | mg/m3 | 1.3E-05 |
| | | | Inhalation | ZINC | 1.6E-07 | mg/m3 | 2.3E-08 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | **PEST/PCB** | | | | | | | |
| | | | Inhalation | AROCLOR-1254 | 5.1E-08 | mg/m3 | 7.0E-09 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | AROCLOR-1260 | 9.8E-08 | mg/m3 | 1.3E-08 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)ANTHRACENE | 2.8E-07 | mg/m3 | 3.9E-08 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | BENZO(A)PYRENE | 5.4E-10 | mg/m3 | 7.4E-11 | mg/m3 | 2.0E-06 | mg/m3 | 3.7E-05 |
| | | | Inhalation | BENZO(B)FLUORANTHENE | 6.2E-10 | mg/m3 | 8.5E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | BENZO(K)FLUORANTHENE | 5.7E-10 | mg/m3 | 7.8E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | DIBENZO(A,H)ANTHRACENE | 9.2E-11 | mg/m3 | 1.3E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | INDENO(1,2,3-CD)PYRENE | 2.4E-10 | mg/m3 | 3.3E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | NAPHTHALENE | 4.5E-06 | mg/m3 | 6.1E-07 | mg/m3 | 3.0E-03 | mg/m3 | 2.0E-04 |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **1.1E-01** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | HC | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 8.3E+03 | mg/kg | 1.3E-02 | mg/kg-d | 1.0E+00 | mg/kg-d | 1.3E-02 |
| | | | Ingestion | ANTIMONY | 2.5E+00 | mg/kg | 3.9E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 9.9E-03 |
| | | | Ingestion | ARSENIC | 3.9E+02 | mg/kg | 3.7E-04 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.2E+00 |
| | | | Ingestion | BARIUM | 1.0E+03 | mg/kg | 1.6E-03 | mg/kg-d | 2.0E-01 | mg/kg-d | 8.1E-03 |
| | | | Ingestion | CADMIUM | 4.5E+00 | mg/kg | 7.3E-06 | mg/kg-d | 1.0E-03 | mg/kg-d | 7.3E-03 |
| | | | Ingestion | CHROMIUM | 2.2E+01 | mg/kg | 3.5E-05 | mg/kg-d | 3.0E-03 | mg/kg-d | 1.2E-02 |
| | | | Ingestion | COBALT | 5.0E+00 | mg/kg | 8.0E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.7E-02 |
| | | | Ingestion | COPPER | 1.7E+02 | mg/kg | 2.7E-04 | mg/kg-d | 4.0E-02 | mg/kg-d | 6.8E-03 |
| | | | Ingestion | CYANIDE | 4.8E+01 | mg/kg | 7.7E-05 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.3E-01 |
| | | | Ingestion | IRON | 1.7E+04 | mg/kg | 2.8E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 3.9E-02 |
| | | | Ingestion | LEAD | 2.9E+03 | mg/kg | 4.6E-03 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 8.1E+01 | mg/kg | 1.3E-04 | mg/kg-d | 2.4E-02 | mg/kg-d | 5.5E-03 |
| | | | Ingestion | NICKEL | 3.3E+01 | mg/kg | 5.4E-05 | mg/kg-d | 2.0E-02 | mg/kg-d | 2.7E-03 |
| | | | Ingestion | THALLIUM | 1.6E+00 | mg/kg | 2.6E-06 | mg/kg-d | 1.0E-05 | mg/kg-d | 2.6E-01 |
| | | | Ingestion | VANADIUM | 2.4E+01 | mg/kg | 3.9E-05 | mg/kg-d | 5.0E-03 | mg/kg-d | 7.8E-03 |
| | | | Ingestion | ZINC | 4.9E+02 | mg/kg | 7.8E-04 | mg/kg-d | 3.0E-01 | mg/kg-d | 2.6E-03 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.4E-01 | mg/kg | 2.2E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.1E-02 |
| | | | Ingestion | AROCLOR-1260 | 5.8E-02 | mg/kg | 9.3E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 4.6E-03 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 7.1E-01 | mg/kg | 1.1E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 7.0E-01 | mg/kg | 1.1E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.7E-03 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 9.5E-01 | mg/kg | 1.5E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.9E-01 | mg/kg | 3.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 3.9E-01 | mg/kg | 6.2E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **1.8E+00** |
| Sediment | Sediment | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 8.3E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 2.5E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 3.9E+02 | mg/kg | 4.4E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.5E-01 |
| | | | Dermal | BARIUM | 1.0E+03 | mg/kg | NA | mg/kg-d | 1.4E-02 | mg/kg-d | NA |
| | | | Dermal | CADMIUM | 4.5E+00 | mg/kg | 1.7E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 6.9E-04 |
| | | | Dermal | CHROMIUM | 2.2E+01 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 5.0E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.7E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | HC | Dermal | CYANIDE | 4.8E+01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 1.7E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 2.9E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 8.1E+01 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | NICKEL | 3.3E+01 | mg/kg | NA | mg/kg-d | 8.0E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 1.6E+00 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 2.4E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | ZINC | 4.9E+02 | mg/kg | NA | mg/kg-d | 3.0E-01 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.4E-01 | mg/kg | 7.2E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 3.6E-03 |
| | | | Dermal | AROCLOR-1260 | 5.8E-02 | mg/kg | 3.1E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.5E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 7.1E-01 | mg/kg | 3.5E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 7.0E-01 | mg/kg | 3.5E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.2E-03 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 9.5E-01 | mg/kg | 4.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.9E-01 | mg/kg | 9.4E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 3.9E-01 | mg/kg | 1.9E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **1.5E-01** |
| Surface Water | Surface Water | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 6.2E+00 | mg/L | 1.2E-04 | mg/kg-d | 1.0E+00 | mg/kg-d | 1.2E-04 |
| | | | Dermal | ANTIMONY | 3.4E-03 | mg/L | 6.4E-08 | mg/kg-d | 6.0E-05 | mg/kg-d | 1.1E-03 |
| | | | Dermal | ARSENIC | 1.1E-01 | mg/L | 2.1E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 6.9E-03 |
| | | | Dermal | BARIUM | 4.5E-01 | mg/L | 8.7E-06 | mg/kg-d | 1.4E-02 | mg/kg-d | 6.2E-04 |
| | | | Dermal | CADMIUM | 2.5E-03 | mg/L | 4.7E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 1.9E-03 |
| | | | Dermal | CHROMIUM | 1.2E-01 | mg/L | 2.2E-06 | mg/kg-d | 7.5E-05 | mg/kg-d | 3.0E-02 |
| | | | Dermal | COBALT | 2.7E-03 | mg/L | 2.1E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 6.9E-05 |
| | | | Dermal | COPPER | 2.8E-02 | mg/L | 5.4E-07 | mg/kg-d | 4.0E-02 | mg/kg-d | 1.3E-05 |
| | | | Dermal | CYANIDE | 8.6E-03 | mg/L | 1.6E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 2.7E-04 |
| | | | Dermal | IRON | 1.4E+01 | mg/L | 2.6E-04 | mg/kg-d | 7.0E-01 | mg/kg-d | 3.7E-04 |
| | | | Dermal | LEAD | 2.4E-01 | mg/L | 4.5E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.6E-01 | mg/L | 3.1E-06 | mg/kg-d | 9.6E-04 | mg/kg-d | 3.2E-03 |
| | | | Dermal | MERCURY | 2.0E-04 | mg/L | 3.9E-09 | mg/kg-d | 2.1E-05 | mg/kg-d | 1.8E-04 |
| | | | Dermal | THALLIUM | 5.4E-03 | mg/L | 1.0E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 1.0E-02 |
| | | | Dermal | VANADIUM | 5.1E-03 | mg/L | 9.7E-08 | mg/kg-d | 1.3E-04 | mg/kg-d | 7.5E-04 |
| | | | Dermal | ZINC | 4.8E-01 | mg/L | 5.5E-06 | mg/kg-d | 3.0E-01 | mg/kg-d | 1.8E-05 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **5.6E-02** |
| **Exposure Point Total (HC)** | | | | | | | | | | | **1E+01** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 4.6E+03 | mg/kg | 2.5E-02 | mg/kg-d | 1.0E+00 | mg/kg-d | 2.5E-02 |
| | | | Ingestion | ANTIMONY | 3.6E+00 | mg/kg | 2.0E-05 | mg/kg-d | 4.0E-04 | mg/kg-d | 5.0E-02 |
| | | | Ingestion | ARSENIC | 8.4E+00 | mg/kg | 2.8E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 9.2E-02 |
| | | | Ingestion | CHROMIUM | 9.2E-01 | mg/kg | 5.0E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 1.7E-03 |
| | | | Ingestion | COBALT | 8.7E-01 | mg/kg | 4.8E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.6E-02 |
| | | | Ingestion | CYANIDE | 3.7E-01 | mg/kg | 2.0E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 3.4E-03 |
| | | | Ingestion | IRON | 7.8E+03 | mg/kg | 4.3E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 6.1E-02 |
| | | | Ingestion | LEAD | 2.1E+02 | mg/kg | 1.2E-03 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | THALLIUM | 4.4E-01 | mg/kg | 2.4E-06 | mg/kg-d | 1.0E-05 | mg/kg-d | 2.4E-01 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 1.3E-01 | mg/kg | 7.0E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.3E-03 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.6E-01 | mg/kg | 1.4E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **4.9E-01** |
| Soil | Soil (0-2 ft bgs) | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 4.6E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 3.6E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 8.4E+00 | mg/kg | 3.3E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.1E-02 |
| | | | Dermal | CHROMIUM | 9.2E-01 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 8.7E-01 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 3.7E-01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 7.8E+03 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 2.1E+02 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 4.4E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 1.3E-01 | mg/kg | 2.1E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.2E-04 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.6E-01 | mg/kg | 4.3E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **1.2E-02** |
| Soil | Particulates in Air | KWL | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 1.4E-06 | mg/m3 | 1.9E-07 | mg/m3 | 5.0E-03 | mg/m3 | 3.9E-05 |
| | | | Inhalation | ANTIMONY | 1.1E-09 | mg/m3 | 1.5E-10 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | ARSENIC | 2.6E-09 | mg/m3 | 3.6E-10 | mg/m3 | 1.5E-05 | mg/m3 | 2.4E-05 |
| | | | Inhalation | CHROMIUM | 2.9E-10 | mg/m3 | 3.9E-11 | mg/m3 | 1.0E-04 | mg/m3 | 3.9E-07 |
| | | | Inhalation | COBALT | 2.7E-10 | mg/m3 | 3.7E-11 | mg/m3 | 6.0E-06 | mg/m3 | 6.1E-06 |
| | | | Inhalation | CYANIDE | 4.9E-06 | mg/m3 | 6.7E-07 | mg/m3 | 8.0E-04 | mg/m3 | 8.4E-04 |
| | | | Inhalation | IRON | 2.4E-06 | mg/m3 | 3.3E-07 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | LEAD | 6.6E-08 | mg/m3 | 9.0E-09 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | THALLIUM | 1.4E-10 | mg/m3 | 1.9E-11 | mg/m3 | NA | mg/m3 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Particulates in Air | KWL | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)PYRENE | 3.9E-11 | mg/m3 | 5.4E-12 | mg/m3 | 2.0E-06 | mg/m3 | 2.7E-06 |
| | | | Inhalation | BENZO(B)FLUORANTHENE | 7.9E-11 | mg/m3 | 1.1E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **9.1E-04** |
| Sediment | Sediment | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.6E+04 | mg/kg | 2.6E-02 | mg/kg-d | 1.0E+00 | mg/kg-d | 2.6E-02 |
| | | | Ingestion | ANTIMONY | 2.0E+00 | mg/kg | 3.3E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 8.2E-03 |
| | | | Ingestion | ARSENIC | 8.8E+01 | mg/kg | 8.5E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.8E-01 |
| | | | Ingestion | CADMIUM | 7.7E+00 | mg/kg | 1.2E-05 | mg/kg-d | 1.0E-03 | mg/kg-d | 1.2E-02 |
| | | | Ingestion | CHROMIUM | 8.6E+00 | mg/kg | 1.4E-05 | mg/kg-d | 3.0E-03 | mg/kg-d | 4.6E-03 |
| | | | Ingestion | COBALT | 8.6E+00 | mg/kg | 1.4E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.6E-02 |
| | | | Ingestion | COPPER | 2.1E+02 | mg/kg | 3.4E-04 | mg/kg-d | 4.0E-02 | mg/kg-d | 8.4E-03 |
| | | | Ingestion | CYANIDE | 4.1E+00 | mg/kg | 6.6E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.1E-02 |
| | | | Ingestion | IRON | 2.7E+04 | mg/kg | 4.3E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 6.1E-02 |
| | | | Ingestion | LEAD | 1.0E+03 | mg/kg | 1.6E-03 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.4E+02 | mg/kg | 2.3E-04 | mg/kg-d | 2.4E-02 | mg/kg-d | 9.5E-03 |
| | | | Ingestion | NICKEL | 3.7E+01 | mg/kg | 5.9E-05 | mg/kg-d | 2.0E-02 | mg/kg-d | 2.9E-03 |
| | | | Ingestion | THALLIUM | 4.7E-01 | mg/kg | 7.5E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 7.5E-02 |
| | | | Ingestion | VANADIUM | 2.6E+01 | mg/kg | 4.2E-05 | mg/kg-d | 5.0E-03 | mg/kg-d | 8.4E-03 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.6E-01 | mg/kg | 2.6E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.3E-02 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 1.8E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 1.7E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.7E-03 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 2.2E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 1.9E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 2.6E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 6.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **5.7E-01** |
| Sediment | Sediment | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.6E+04 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 2.0E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 8.8E+01 | mg/kg | 1.0E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.4E-02 |
| | | | Dermal | CADMIUM | 7.7E+00 | mg/kg | 2.9E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 1.2E-03 |
| | | | Dermal | CHROMIUM | 8.6E+00 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 8.6E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 2.1E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 4.1E+00 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 2.7E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | KWL | Dermal | LEAD | 1.0E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.4E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | NICKEL | 3.7E+01 | mg/kg | NA | mg/kg-d | 8.0E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 4.7E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 2.6E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.6E-01 | mg/kg | 8.8E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 4.4E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 5.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 5.3E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.8E-03 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 6.9E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 6.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 8.1E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 2.1E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **4.1E-02** |
| Surface Water | Surface Water | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.4E+00 | mg/L | 2.6E-05 | mg/kg-d | 1.0E+00 | mg/kg-d | 2.6E-05 |
| | | | Dermal | ANTIMONY | 3.7E-03 | mg/L | 7.1E-08 | mg/kg-d | 6.0E-05 | mg/kg-d | 1.2E-03 |
| | | | Dermal | ARSENIC | 1.7E-02 | mg/L | 3.2E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.1E-03 |
| | | | Dermal | CHROMIUM | 5.3E-03 | mg/L | 1.0E-07 | mg/kg-d | 7.5E-05 | mg/kg-d | 1.4E-03 |
| | | | Dermal | COBALT | 1.6E-03 | mg/L | 1.2E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.1E-05 |
| | | | Dermal | CYANIDE | 1.8E-03 | mg/L | 3.4E-08 | mg/kg-d | 6.0E-04 | mg/kg-d | 5.7E-05 |
| | | | Dermal | IRON | 3.6E+00 | mg/L | 6.8E-05 | mg/kg-d | 7.0E-01 | mg/kg-d | 9.8E-05 |
| | | | Dermal | LEAD | 2.9E-02 | mg/L | 5.6E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 8.0E-02 | mg/L | 1.5E-06 | mg/kg-d | 9.6E-04 | mg/kg-d | 1.6E-03 |
| | | | Dermal | THALLIUM | 5.8E-03 | mg/L | 1.1E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 1.1E-02 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1.6E-02** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **1E+00** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC Value | EPC Units | Non-cancer Hazard Calculations: Intake/Exposure Value | Intake/Exposure Units | RfD/RfC Value | RfD/RfC Units | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|

**Ingestion - Soil**

$$\text{Intake Factor (IF)} = \frac{IR \times FS \times EF \times ED \times CF}{BW \times AT}$$

| | | | |
|---|---|---|---|
| = | 5.5E-06 | (Child) | |
| IR | Ingestion Rate (mg/day) | 200 | |
| FS | Fraction from Contaminated Source | 1 | |
| EF | Soil Ingestion Exposure Frequency (days/year) | 150 | |
| ED | Soil Ingestion Exposure Duration (years) | 6 | |
| CF | Conversion Factor (kg/mg) | 0.000001 | |
| BW | Body Weight (kg) | 15 | |
| AT | Averaging Time (days) | 2,190 | |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{soil} * IF * B$
(B) presented in Table 5.1
Non-cancer Hazard = Intake/RfD

**Dermal - Soil**

$$\text{Intake Factor (IF)} = \frac{SA \times AF \times EF \times ED \times CF}{BW \times AT}$$

| | | | |
|---|---|---|---|
| = | 1.3E-05 | (Child) | |
| SA | Surface Area Exposed to Soil ($cm^2$/day) | 2,373 | |
| AF | Soil Skin Adherence Factor ($mg/cm^2$) | 0.2 | |
| EF | Soil Dermal Exposure Frequency (days/year) | 150 | |
| ED | Soil Dermal Exposure Duration (years) | 6 | |
| CF | Conversion Factor (kg/mg) | 0.000001 | |
| BW | Body Weight (kg) | 15 | |
| AT | Averaging Time (days) | 2,190 | |

$Intake_{derm}(mg/kg{\cdot}d) = EPC_{soil} * IF * ABS$
(ABS) presented in Table 5.1
Non-cancer Hazard = Intake/RfD

**Inhalation - Soil**

$$\text{Intake Factor (IF)} = \frac{EF \times ED \times ET \times CF}{AT}$$

| | | | |
|---|---|---|---|
| = | 1.4E-01 | (Child) | |
| EF | Soil Exposure Frequency (days/year) | 150 | |
| ED | Soil Exposure Duration (years) | 6 | |
| ET | Soil Exposure Time (hours/day) | 8 | |
| CF | Conversion Factor (days/hours) | 0.042 | |
| AT | Averaging Time (days) | 2,190 | |

$EPC_{air} = EPC_{soil}$ x [1/Volatilization Factor (VF) + 1/Particulate Emissions Factor (PEF)]
Exposure = $EPC_{air}$ x IF
Non-cancer Hazard = Exposure/RfC

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |

**Ingestion - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{IR \times FS \times EF \times ED \times CF}{BW \times AT}$$

| | | | |
|---|---|---|---|
| = | 1.6E-06 | (Child) | $Intake_{ing}(mg/kg{\cdot}d) = EPC_{sediment} * IF * B$ |
| IR | Ingestion Rate (mg/day) | 200 | (B) presented in Table 5.1 |
| FS | Fraction from Contaminated Source | 1 | Non-cancer Hazard = Intake/RfD |
| EF | Sediment Ingestion Exposure Frequency (days/year) | 44 | |
| ED | Sediment Ingestion Exposure Duration (years) | 6 | |
| CF | Conversion Factor (kg/mg) | 0.000001 | |
| BW | Body Weight (kg) | 15 | |
| AT | Averaging Time (days) | 2,190 | |

**Dermal - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{SA \times AF \times EF \times ED \times CF}{BW \times AT}$$

| | | | |
|---|---|---|---|
| = | 3.8E-06 | (Child) | $Intake_{derm}(mg/kg{\cdot}d) = EPC_{sediment} * IF * ABS$ |
| SA | Surface Area Exposed to Sediment ($cm^2$/day) | 2,373 | (ABS) presented in Table 5.1 |
| AF | Sediment Skin Adherence Factor ($mg/cm^2$) | 0.2 | Non-cancer Hazard = Intake/RfD |
| EF | Sediment Dermal Exposure Frequency (days/year) | 44 | |
| ED | Sediment Dermal Exposure Duration (years) | 6 | |
| CF | Conversion Factor (kg/mg) | 0.000001 | |
| BW | Body Weight (kg) | 15 | |
| AT | Averaging Time (days) | 2,190 | |

**Dermal - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{SA \times EV \times EF \times ED}{BW \times AT}$$

| | | | |
|---|---|---|---|
| = | 1.9E+01 | (Child) | $Intake_{derm}(mg/kg{\cdot}d)$ = IF x Absorbed Dose per Event ($DA_{Event}$) |
| SA | Surface Area Exposed to Surface Water ($cm^2$) | 2,373 | ($DA_{event}$) presented in Table 4.6 |
| EF | Surface Water Dermal Exposure Frequency (days/year) | 44 | Non-cancer Hazard = Intake/RfD |
| ED | Surface Water Dermal Exposure Duration (years) | 6 | |
| EV | Events per Day (events/day) | 1 | |
| BW | Body Weight (kg) | 15 | |
| AT | Averaging Time (days) | 2,190 | |

**Table 7.13**
**Calculation of Chemical Non-cancer Hazards for Swimmer**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.0E+03 | mg/kg | 1.1E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 1.1E-03 |
| | | | Ingestion | ANTIMONY | 2.3E+00 | mg/kg | 8.1E-07 | mg/kg-d | 4.0E-04 | mg/kg-d | 2.0E-03 |
| | | | Ingestion | ARSENIC | 9.8E+00 | mg/kg | 2.1E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.1E-03 |
| | | | Ingestion | CHROMIUM | 8.0E-01 | mg/kg | 2.9E-07 | mg/kg-d | 3.0E-03 | mg/kg-d | 9.6E-05 |
| | | | Ingestion | COBALT | 6.2E+00 | mg/kg | 2.2E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.4E-03 |
| | | | Ingestion | COPPER | 1.0E+02 | mg/kg | 3.6E-05 | mg/kg-d | 4.0E-02 | mg/kg-d | 9.1E-04 |
| | | | Ingestion | CYANIDE | 2.7E+00 | mg/kg | 9.6E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.6E-03 |
| | | | Ingestion | IRON | 8.0E+03 | mg/kg | 2.9E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 4.1E-03 |
| | | | Ingestion | LEAD | 1.7E+02 | mg/kg | 6.1E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 3.9E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 1.6E-03 |
| | | | Ingestion | THALLIUM | 8.6E-01 | mg/kg | 3.1E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 3.1E-02 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 6.5E-02 | mg/kg | 2.3E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.2E-03 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 7.1E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 5.3E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.8E-02 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 1.1E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 2.2E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | CHRYSENE | 3.0E+01 | mg/kg | 1.1E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 5.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 1.5E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | **TICs** | | | | | | | |
| | | | Ingestion | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 4.3E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **7.6E-02** |
| Sediment | Sediment | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.0E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 2.3E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 9.8E+00 | mg/kg | 1.3E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.3E-03 |
| | | | Dermal | CHROMIUM | 8.0E-01 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 6.2E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.0E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 2.7E+00 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 8.0E+03 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.7E+02 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 8.6E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 6.5E-02 | mg/kg | 3.9E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 2.0E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 1.1E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 8.3E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.8E-02 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 1.7E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 3.5E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | CHRYSENE | 3.0E+01 | mg/kg | 1.7E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 8.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 2.3E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | **TICs** | | | | | | | |
| | | | Dermal | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 6.8E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **3.4E-02** |
| Surface Water | Surface Water | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ARSENIC | 7.8E-03 | mg/L | 5.0E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.7E-02 |
| | | | Ingestion | CHROMIUM | 2.6E-03 | mg/L | 1.6E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 5.4E-04 |
| | | | Ingestion | COBALT | 2.1E-03 | mg/L | 1.4E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.5E-03 |
| | | | Ingestion | CYANIDE | 4.4E-03 | mg/L | 2.8E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 4.7E-03 |
| | | | Ingestion | IRON | 1.1E+01 | mg/L | 7.2E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.0E-02 |
| | | | Ingestion | MANGANESE | 9.5E-01 | mg/L | 6.1E-04 | mg/kg-d | 2.4E-02 | mg/kg-d | 2.5E-02 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 4.3E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 2.0E-04 | mg/L | 1.3E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.3E-04 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 8.5E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 1.1E-06 | mg/kg-d | 2.0E-02 | mg/kg-d | 5.7E-05 |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 4.4E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 5.6E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **6E-02** |
| Surface Water | Surface Water | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ARSENIC | 7.8E-03 | mg/L | 1.3E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.2E-03 |
| | | | Dermal | CHROMIUM | 2.6E-03 | mg/L | 4.1E-07 | mg/kg-d | 7.5E-05 | mg/kg-d | 5.5E-03 |
| | | | Dermal | COBALT | 2.1E-03 | mg/L | 1.4E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.6E-04 |
| | | | Dermal | CYANIDE | 4.4E-03 | mg/L | 7.2E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.2E-03 |
| | | | Dermal | IRON | 1.1E+01 | mg/L | 1.8E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 2.6E-03 |
| | | | Dermal | MANGANESE | 9.5E-01 | mg/L | 1.5E-04 | mg/kg-d | 9.6E-04 | mg/kg-d | 1.6E-01 |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | SL | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 1.6E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 2.0E-04 | mg/L | 7.0E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.3E-01 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 2.7E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 1.9E-03 | mg/kg-d | 2.0E-02 | mg/kg-d | 9.7E-02 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 2.3E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 3.8E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **5E-01** |
| **Exposure Point Total (SL)** | | | | | | | | | | | **7E-01** |
| Sediment | Sediment | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.5E+04 | mg/kg | 5.3E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 5.3E-03 |
| | | | Ingestion | ANTIMONY | 7.3E+00 | mg/kg | 2.6E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 6.5E-03 |
| | | | Ingestion | ARSENIC | 2.8E+02 | mg/kg | 6.1E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.0E-01 |
| | | | Ingestion | CADMIUM | 1.3E+01 | mg/kg | 4.8E-06 | mg/kg-d | 1.0E-03 | mg/kg-d | 4.8E-03 |
| | | | Ingestion | CHROMIUM | 7.8E+00 | mg/kg | 2.8E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 9.3E-04 |
| | | | Ingestion | COBALT | 1.7E+01 | mg/kg | 6.0E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.0E-02 |
| | | | Ingestion | COPPER | 1.8E+02 | mg/kg | 6.3E-05 | mg/kg-d | 4.0E-02 | mg/kg-d | 1.6E-03 |
| | | | Ingestion | CYANIDE | 1.5E+01 | mg/kg | 5.5E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 9.1E-03 |
| | | | Ingestion | IRON | 4.2E+04 | mg/kg | 1.5E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 2.2E-02 |
| | | | Ingestion | LEAD | 1.5E+03 | mg/kg | 5.3E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 3.9E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 1.6E-03 |
| | | | Ingestion | VANADIUM | 5.6E+01 | mg/kg | 2.0E-05 | mg/kg-d | 5.0E-03 | mg/kg-d | 4.0E-03 |
| | | | Ingestion | ZINC | 1.1E+03 | mg/kg | 4.0E-04 | mg/kg-d | 3.0E-01 | mg/kg-d | 1.3E-03 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 8.0E-02 | mg/kg | 2.9E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.4E-03 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 4.8E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 4.9E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.6E-03 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 7.3E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 7.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 1.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 2.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | NAPHTHALENE | 2.8E+00 | mg/kg | 1.0E-06 | mg/kg-d | 2.0E-02 | mg/kg-d | 5.1E-05 |
| | | | Ingestion | **VOCs** | | | | | | | |
| | | | Ingestion | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | 2.4E-08 | mg/kg-d | 5.0E-04 | mg/kg-d | 4.8E-05 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **2.8E-01** |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.5E+04 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 7.3E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 2.8E+02 | mg/kg | 3.7E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.2E-01 |
| | | | Dermal | CADMIUM | 1.3E+01 | mg/kg | 5.8E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 2.3E-03 |
| | | | Dermal | CHROMIUM | 7.8E+00 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 1.7E+01 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.8E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 1.5E+01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 4.2E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.5E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 5.6E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | ZINC | 1.1E+03 | mg/kg | NA | mg/kg-d | 3.0E-01 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 8.0E-02 | mg/kg | 4.9E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 2.4E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 7.6E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 7.7E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.6E-03 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 1.1E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 1.1E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 1.6E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 4.2E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | NAPHTHALENE | 2.8E+00 | mg/kg | 1.6E-06 | mg/kg-d | 2.0E-02 | mg/kg-d | 8.0E-05 |
| | | | Dermal | **VOCs** | | | | | | | |
| | | | Dermal | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | NA | mg/kg-d | 5.0E-04 | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **1.3E-01** |
| Surface Water | Surface Water | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.3E+00 | mg/L | 8.2E-04 | mg/kg-d | 1.0E+00 | mg/kg-d | 8.2E-04 |
| | | | Ingestion | ANTIMONY | 1.2E-03 | mg/L | 7.3E-07 | mg/kg-d | 4.0E-04 | mg/kg-d | 1.8E-03 |
| | | | Ingestion | ARSENIC | 3.1E-02 | mg/L | 2.0E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 6.5E-02 |
| | | | Ingestion | CADMIUM | 6.2E-04 | mg/L | 4.0E-07 | mg/kg-d | 5.0E-04 | mg/kg-d | 7.9E-04 |
| | | | Ingestion | CHROMIUM | 4.5E-03 | mg/L | 2.9E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 9.5E-04 |
| | | | Ingestion | COBALT | 1.0E-03 | mg/L | 6.4E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.1E-03 |
| | | | Ingestion | CYANIDE | 2.0E-03 | mg/L | 1.3E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 2.1E-03 |
| | | | Ingestion | IRON | 6.5E+00 | mg/L | 4.1E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 5.9E-03 |
| | | | Ingestion | LEAD | 2.6E-02 | mg/L | 1.6E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 7.0E-02 | mg/L | 4.5E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 1.9E-03 |
| | | | Ingestion | THALLIUM | 1.2E-03 | mg/L | 7.9E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 7.9E-02 |
| | | | Ingestion | VANADIUM | 2.5E-03 | mg/L | 1.6E-06 | mg/kg-d | 5.0E-03 | mg/kg-d | 3.1E-04 |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | BWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 3.4E-05 | mg/L | 2.2E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.2E-05 |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **2E-01** |
| Surface Water | Surface Water | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.3E+00 | mg/L | 2.1E-04 | mg/kg-d | 1.0E+00 | mg/kg-d | 2.1E-04 |
| | | | Dermal | ANTIMONY | 1.2E-03 | mg/L | 1.9E-07 | mg/kg-d | 6.0E-05 | mg/kg-d | 3.1E-03 |
| | | | Dermal | ARSENIC | 3.1E-02 | mg/L | 4.9E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.6E-02 |
| | | | Dermal | CADMIUM | 6.2E-04 | mg/L | 1.0E-07 | mg/kg-d | 2.5E-05 | mg/kg-d | 4.0E-03 |
| | | | Dermal | CHROMIUM | 4.5E-03 | mg/L | 7.2E-07 | mg/kg-d | 7.5E-05 | mg/kg-d | 9.6E-03 |
| | | | Dermal | COBALT | 1.0E-03 | mg/L | 6.5E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.2E-04 |
| | | | Dermal | CYANIDE | 2.0E-03 | mg/L | 3.2E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 5.4E-04 |
| | | | Dermal | IRON | 6.5E+00 | mg/L | 1.0E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.5E-03 |
| | | | Dermal | LEAD | 2.6E-02 | mg/L | 4.1E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 7.0E-02 | mg/L | 1.1E-05 | mg/kg-d | 9.6E-04 | mg/kg-d | 1.2E-02 |
| | | | Dermal | THALLIUM | 1.2E-03 | mg/L | 2.0E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 2.0E-02 |
| | | | Dermal | VANADIUM | 2.5E-03 | mg/L | 4.0E-07 | mg/kg-d | 1.3E-04 | mg/kg-d | 3.0E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 3.4E-05 | mg/L | 1.2E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.0E-02 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1E-01** |
| **Exposure Point Total (BWL)** | | | | | | | | | | | **7E-01** |
| Sediment | Sediment | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.6E+04 | mg/kg | 5.8E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 5.8E-03 |
| | | | Ingestion | ANTIMONY | 2.0E+00 | mg/kg | 7.3E-07 | mg/kg-d | 4.0E-04 | mg/kg-d | 1.8E-03 |
| | | | Ingestion | ARSENIC | 8.8E+01 | mg/kg | 1.9E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 6.3E-02 |
| | | | Ingestion | CADMIUM | 7.7E+00 | mg/kg | 2.8E-06 | mg/kg-d | 1.0E-03 | mg/kg-d | 2.8E-03 |
| | | | Ingestion | CHROMIUM | 8.6E+00 | mg/kg | 3.1E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 1.0E-03 |
| | | | Ingestion | COBALT | 8.6E+00 | mg/kg | 3.1E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.0E-02 |
| | | | Ingestion | COPPER | 2.1E+02 | mg/kg | 7.5E-05 | mg/kg-d | 4.0E-02 | mg/kg-d | 1.9E-03 |
| | | | Ingestion | CYANIDE | 4.1E+00 | mg/kg | 1.5E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 2.4E-03 |
| | | | Ingestion | IRON | 2.7E+04 | mg/kg | 9.5E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.4E-02 |
| | | | Ingestion | LEAD | 1.0E+03 | mg/kg | 3.6E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.4E+02 | mg/kg | 5.1E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 2.1E-03 |
| | | | Ingestion | NICKEL | 3.7E+01 | mg/kg | 1.3E-05 | mg/kg-d | 2.0E-02 | mg/kg-d | 6.6E-04 |
| | | | Ingestion | THALLIUM | 4.7E-01 | mg/kg | 1.7E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 1.7E-02 |
| | | | Ingestion | VANADIUM | 2.6E+01 | mg/kg | 9.4E-06 | mg/kg-d | 5.0E-03 | mg/kg-d | 1.9E-03 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.6E-01 | mg/kg | 5.9E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 2.9E-03 |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | KWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 4.1E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 3.9E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.3E-03 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 5.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 4.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 5.9E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 1.5E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **1.3E-01** |
| Sediment | Sediment | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.6E+04 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 2.0E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 8.8E+01 | mg/kg | 1.1E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.8E-02 |
| | | | Dermal | CADMIUM | 7.7E+00 | mg/kg | 3.3E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 1.3E-03 |
| | | | Dermal | CHROMIUM | 8.6E+00 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 8.6E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 2.1E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 4.1E+00 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 2.7E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.0E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.4E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | NICKEL | 3.7E+01 | mg/kg | NA | mg/kg-d | 8.0E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 4.7E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 2.6E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.6E-01 | mg/kg | 1.0E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 5.0E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 6.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 6.0E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.0E-03 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 7.8E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 6.8E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 9.2E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 2.3E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **4.7E-02** |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.4E+00 | mg/L | 8.8E-04 | mg/kg-d | 1.0E+00 | mg/kg-d | 8.8E-04 |
| | | | Ingestion | ANTIMONY | 3.7E-03 | mg/L | 2.4E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 5.9E-03 |
| | | | Ingestion | ARSENIC | 1.7E-02 | mg/L | 1.1E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.6E-02 |
| | | | Ingestion | CHROMIUM | 5.3E-03 | mg/L | 3.4E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 1.1E-03 |
| | | | Ingestion | COBALT | 1.6E-03 | mg/L | 1.0E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.4E-03 |
| | | | Ingestion | CYANIDE | 1.8E-03 | mg/L | 1.1E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.9E-03 |
| | | | Ingestion | IRON | 3.6E+00 | mg/L | 2.3E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 3.3E-03 |
| | | | Ingestion | LEAD | 2.9E-02 | mg/L | 1.9E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 8.0E-02 | mg/L | 5.1E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 2.1E-03 |
| | | | Ingestion | THALLIUM | 5.8E-03 | mg/L | 3.7E-06 | mg/kg-d | 1.0E-05 | mg/kg-d | 3.7E-01 |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **4E-01** |
| Surface Water | Surface Water | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.4E+00 | mg/L | 2.2E-04 | mg/kg-d | 1.0E+00 | mg/kg-d | 2.2E-04 |
| | | | Dermal | ANTIMONY | 3.7E-03 | mg/L | 6.0E-07 | mg/kg-d | 6.0E-05 | mg/kg-d | 9.9E-03 |
| | | | Dermal | ARSENIC | 1.7E-02 | mg/L | 2.7E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 9.0E-03 |
| | | | Dermal | CHROMIUM | 5.3E-03 | mg/L | 8.6E-07 | mg/kg-d | 7.5E-05 | mg/kg-d | 1.1E-02 |
| | | | Dermal | COBALT | 1.6E-03 | mg/L | 1.0E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.4E-04 |
| | | | Dermal | CYANIDE | 1.8E-03 | mg/L | 2.9E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 4.8E-04 |
| | | | Dermal | IRON | 3.6E+00 | mg/L | 5.8E-04 | mg/kg-d | 7.0E-01 | mg/kg-d | 8.3E-04 |
| | | | Dermal | LEAD | 2.9E-02 | mg/L | 4.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 8.0E-02 | mg/L | 1.3E-05 | mg/kg-d | 9.6E-04 | mg/kg-d | 1.3E-02 |
| | | | Dermal | THALLIUM | 5.8E-03 | mg/L | 9.3E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 9.3E-02 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1E-01** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **7E-01** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

**Ingestion - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{\text{IR} \times \text{FS} \times \text{EF} \times \text{ED} \times \text{CF}}{\text{BW} \times \text{AT}} = 3.6\text{E-}07 \text{ (Adult)}$$

| | | |
|---|---|---|
| IR | Ingestion Rate (mg/day) | 100 |
| FS | Fraction from Contaminated Source | 1 |
| EF | Sediment Ingestion Exposure Frequency (days/year) | 105 |
| ED | Sediment Ingestion Exposure Duration (years) | 26 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 80 |
| AT | Averaging Time (days) | 9,490 |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{sediment} * IF * B$

(B) presented in Table 5.1

Non-cancer Hazard = Intake/RfD

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |

**Dermal - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{SA \times AF \times EF \times ED \times CF}{BW \times AT}$$

| | | | |
|---|---|---|---|
| = | 4.3E-06 | (Adult) | |

$Intake_{derm}(mg/kg{\cdot}d) = EPC_{sediment} * IF * ABS$
(ABS) presented in Table 5.1
Non-cancer Hazard = Intake/RfD

| | | |
|---|---|---|
| SA | Surface Area Exposed to Sediment ($cm^2$/day) | 6,032 |
| AF | Sediment Skin Adherence Factor ($mg/cm^2$) | 0.2 |
| EF | Sediment Dermal Exposure Frequency (days/year) | 105 |
| ED | Sediment Dermal Exposure Duration (years) | 26 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 80 |
| AT | Averaging Time (days) | 9,490 |

**Ingestion - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{IR \times FR \times ET \times EF \times ED}{BW \times AT}$$

| | | |
|---|---|---|
| = | 6.4E-04 | (Adult) |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{sw} * IF$
Non-cancer Hazard = Intake/RfD

| | | |
|---|---|---|
| IR | Ingestion Rate - Surface Water (L/hour) | 0.071 |
| FS | Fraction from Contaminated Source | 1 |
| ET | Surface Water Exposure Time (hours/day) | 2.5 |
| EF | Surface Water Ingestion Exposure Frequency (days/year) | 105 |
| ED | Surface Water Exposure Duration (years) | 26 |
| BW | Body Weight (kg) | 80 |
| AT | Averaging Time (days) | 9,490 |

**Dermal - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{SA \times EV \times EF \times ED}{BW \times AT}$$

| | | |
|---|---|---|
| = | 7.1E+01 | (Adult) |

$Intake_{derm}(mg/kg{\cdot}d)$ = IF x Absorbed Dose per Event ($DA_{Event}$)
($DA_{event}$) presented in Table 4.6
Non-cancer Hazard = Intake/RfD

| | | |
|---|---|---|
| SA | Surface Area Exposed to Surface Water ($cm^2$) | 19,652 |
| EF | Surface Water Dermal Exposure Frequency (days/year) | 105 |
| ED | Surface Water Dermal Exposure Duration (years) | 26 |
| EV | Events per Day (events/day) | 1 |
| BW | Body Weight (kg) | 80 |
| AT | Averaging Time (days) | 9,490 |

**Table 7.14**
**Calculation of Chemical Non-cancer Hazards for Swimmer**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.0E+03 | mg/kg | 1.9E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 1.9E-03 |
| | | | Ingestion | ANTIMONY | 2.3E+00 | mg/kg | 1.5E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 3.7E-03 |
| | | | Ingestion | ARSENIC | 9.8E+00 | mg/kg | 3.8E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.3E-02 |
| | | | Ingestion | CHROMIUM | 8.0E-01 | mg/kg | 5.2E-07 | mg/kg-d | 3.0E-03 | mg/kg-d | 1.7E-04 |
| | | | Ingestion | COBALT | 6.2E+00 | mg/kg | 4.0E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.3E-02 |
| | | | Ingestion | COPPER | 1.0E+02 | mg/kg | 6.6E-05 | mg/kg-d | 4.0E-02 | mg/kg-d | 1.6E-03 |
| | | | Ingestion | CYANIDE | 2.7E+00 | mg/kg | 1.7E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 2.9E-03 |
| | | | Ingestion | IRON | 8.0E+03 | mg/kg | 5.2E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 7.4E-03 |
| | | | Ingestion | LEAD | 1.7E+02 | mg/kg | 1.1E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 7.1E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 3.0E-03 |
| | | | Ingestion | THALLIUM | 8.6E-01 | mg/kg | 5.6E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 5.6E-02 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 6.5E-02 | mg/kg | 4.2E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 2.1E-03 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 1.3E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 9.5E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.2E-02 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 1.9E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 4.1E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | CHRYSENE | 3.0E+01 | mg/kg | 1.9E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 9.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 2.6E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | **TICs** | | | | | | | |
| | | | Ingestion | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 7.8E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **1.4E-01** |
| Sediment | Sediment | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.0E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 2.3E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 9.8E+00 | mg/kg | 1.8E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.9E-03 |
| | | | Dermal | CHROMIUM | 8.0E-01 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 6.2E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.0E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 2.7E+00 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 8.0E+03 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.7E+02 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 8.6E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 6.5E-02 | mg/kg | 5.5E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 2.7E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 1.5E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 1.1E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.8E-02 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 2.3E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 4.9E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | CHRYSENE | 3.0E+01 | mg/kg | 2.3E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 1.2E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 3.2E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | **TICs** | | | | | | | |
| | | | Dermal | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 9.4E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **4.7E-02** |
| Surface Water | Surface Water | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ARSENIC | 7.8E-03 | mg/L | 7.2E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.4E-02 |
| | | | Ingestion | CHROMIUM | 2.6E-03 | mg/L | 2.4E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 7.9E-04 |
| | | | Ingestion | COBALT | 2.1E-03 | mg/L | 2.0E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 6.6E-03 |
| | | | Ingestion | CYANIDE | 4.4E-03 | mg/L | 4.1E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 6.8E-03 |
| | | | Ingestion | IRON | 1.1E+01 | mg/L | 1.0E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.5E-02 |
| | | | Ingestion | MANGANESE | 9.5E-01 | mg/L | 8.8E-04 | mg/kg-d | 2.4E-02 | mg/kg-d | 3.6E-02 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 6.2E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 2.0E-04 | mg/L | 1.8E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 6.2E-04 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 1.2E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 1.7E-06 | mg/kg-d | 2.0E-02 | mg/kg-d | 8.3E-05 |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 6.3E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 8.1E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **9E-02** |
| Surface Water | Surface Water | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ARSENIC | 7.8E-03 | mg/L | 1.4E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.5E-03 |
| | | | Dermal | CHROMIUM | 2.6E-03 | mg/L | 4.4E-07 | mg/kg-d | 7.5E-05 | mg/kg-d | 5.9E-03 |
| | | | Dermal | COBALT | 2.1E-03 | mg/L | 1.5E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.9E-04 |
| | | | Dermal | CYANIDE | 4.4E-03 | mg/L | 7.7E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.3E-03 |
| | | | Dermal | IRON | 1.1E+01 | mg/L | 2.0E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 2.8E-03 |
| | | | Dermal | MANGANESE | 9.5E-01 | mg/L | 1.6E-04 | mg/kg-d | 9.6E-04 | mg/kg-d | 1.7E-01 |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | SL | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 1.8E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 2.0E-04 | mg/L | 8.0E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.7E-01 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 3.1E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 2.2E-03 | mg/kg-d | 2.0E-02 | mg/kg-d | 1.1E-01 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 2.6E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 4.3E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **6E-01** |
| **Exposure Point Total (SL)** | | | | | | | | | | | **8E-01** |
| Sediment | Sediment | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.5E+04 | mg/kg | 9.5E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 9.5E-03 |
| | | | Ingestion | ANTIMONY | 7.3E+00 | mg/kg | 4.7E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 1.2E-02 |
| | | | Ingestion | ARSENIC | 2.8E+02 | mg/kg | 1.1E-04 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.7E-01 |
| | | | Ingestion | CADMIUM | 1.3E+01 | mg/kg | 8.7E-06 | mg/kg-d | 1.0E-03 | mg/kg-d | 8.7E-03 |
| | | | Ingestion | CHROMIUM | 7.8E+00 | mg/kg | 5.0E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 1.7E-03 |
| | | | Ingestion | COBALT | 1.7E+01 | mg/kg | 1.1E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.6E-02 |
| | | | Ingestion | COPPER | 1.8E+02 | mg/kg | 1.1E-04 | mg/kg-d | 4.0E-02 | mg/kg-d | 2.9E-03 |
| | | | Ingestion | CYANIDE | 1.5E+01 | mg/kg | 9.9E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.6E-02 |
| | | | Ingestion | IRON | 4.2E+04 | mg/kg | 2.7E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 3.9E-02 |
| | | | Ingestion | LEAD | 1.5E+03 | mg/kg | 9.6E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 7.1E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 3.0E-03 |
| | | | Ingestion | VANADIUM | 5.6E+01 | mg/kg | 3.6E-05 | mg/kg-d | 5.0E-03 | mg/kg-d | 7.3E-03 |
| | | | Ingestion | ZINC | 1.1E+03 | mg/kg | 7.3E-04 | mg/kg-d | 3.0E-01 | mg/kg-d | 2.4E-03 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 8.0E-02 | mg/kg | 5.2E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 2.6E-03 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 8.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 8.9E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.0E-03 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 1.3E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 1.3E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 1.9E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 4.8E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | NAPHTHALENE | 2.8E+00 | mg/kg | 1.8E-06 | mg/kg-d | 2.0E-02 | mg/kg-d | 9.2E-05 |
| | | | Ingestion | **VOCs** | | | | | | | |
| | | | Ingestion | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | 4.3E-08 | mg/kg-d | 5.0E-04 | mg/kg-d | 8.7E-05 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **5.1E-01** |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.5E+04 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 7.3E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 2.8E+02 | mg/kg | 5.1E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.7E-01 |
| | | | Dermal | CADMIUM | 1.3E+01 | mg/kg | 8.0E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 3.2E-03 |
| | | | Dermal | CHROMIUM | 7.8E+00 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 1.7E+01 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.8E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 1.5E+01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 4.2E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.5E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 5.6E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | ZINC | 1.1E+03 | mg/kg | NA | mg/kg-d | 3.0E-01 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 8.0E-02 | mg/kg | 6.8E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 3.4E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 1.1E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 1.1E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.6E-03 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 1.6E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 1.5E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 2.2E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 5.8E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | NAPHTHALENE | 2.8E+00 | mg/kg | 2.2E-06 | mg/kg-d | 2.0E-02 | mg/kg-d | 1.1E-04 |
| | | | Dermal | **VOCs** | | | | | | | |
| | | | Dermal | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | NA | mg/kg-d | 5.0E-04 | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **1.8E-01** |
| Surface Water | Surface Water | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.3E+00 | mg/L | 1.2E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 1.2E-03 |
| | | | Ingestion | ANTIMONY | 1.2E-03 | mg/L | 1.1E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 2.7E-03 |
| | | | Ingestion | ARSENIC | 3.1E-02 | mg/L | 2.8E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 9.4E-02 |
| | | | Ingestion | CADMIUM | 6.2E-04 | mg/L | 5.7E-07 | mg/kg-d | 5.0E-04 | mg/kg-d | 1.1E-03 |
| | | | Ingestion | CHROMIUM | 4.5E-03 | mg/L | 4.1E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 1.4E-03 |
| | | | Ingestion | COBALT | 1.0E-03 | mg/L | 9.3E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.1E-03 |
| | | | Ingestion | CYANIDE | 2.0E-03 | mg/L | 1.8E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 3.1E-03 |
| | | | Ingestion | IRON | 6.5E+00 | mg/L | 6.0E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 8.6E-03 |
| | | | Ingestion | LEAD | 2.6E-02 | mg/L | 2.4E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 7.0E-02 | mg/L | 6.5E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 2.7E-03 |
| | | | Ingestion | THALLIUM | 1.2E-03 | mg/L | 1.1E-06 | mg/kg-d | 1.0E-05 | mg/kg-d | 1.1E-01 |
| | | | Ingestion | VANADIUM | 2.5E-03 | mg/L | 2.3E-06 | mg/kg-d | 5.0E-03 | mg/kg-d | 4.5E-04 |

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| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | BWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 3.4E-05 | mg/L | 3.1E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.0E-04 |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **2E-01** |
| Surface Water | Surface Water | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.3E+00 | mg/L | 2.2E-04 | mg/kg-d | 1.0E+00 | mg/kg-d | 2.2E-04 |
| | | | Dermal | ANTIMONY | 1.2E-03 | mg/L | 2.0E-07 | mg/kg-d | 6.0E-05 | mg/kg-d | 3.3E-03 |
| | | | Dermal | ARSENIC | 3.1E-02 | mg/L | 5.3E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.8E-02 |
| | | | Dermal | CADMIUM | 6.2E-04 | mg/L | 1.1E-07 | mg/kg-d | 2.5E-05 | mg/kg-d | 4.3E-03 |
| | | | Dermal | CHROMIUM | 4.5E-03 | mg/L | 7.8E-07 | mg/kg-d | 7.5E-05 | mg/kg-d | 1.0E-02 |
| | | | Dermal | COBALT | 1.0E-03 | mg/L | 7.0E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.3E-04 |
| | | | Dermal | CYANIDE | 2.0E-03 | mg/L | 3.5E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 5.8E-04 |
| | | | Dermal | IRON | 6.5E+00 | mg/L | 1.1E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.6E-03 |
| | | | Dermal | LEAD | 2.6E-02 | mg/L | 4.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 7.0E-02 | mg/L | 1.2E-05 | mg/kg-d | 9.6E-04 | mg/kg-d | 1.3E-02 |
| | | | Dermal | THALLIUM | 1.2E-03 | mg/L | 2.1E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 2.1E-02 |
| | | | Dermal | VANADIUM | 2.5E-03 | mg/L | 4.3E-07 | mg/kg-d | 1.3E-04 | mg/kg-d | 3.3E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 3.4E-05 | mg/L | 1.4E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.6E-02 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1E-01** |
| **Exposure Point Total (BWL)** | | | | | | | | | | | **1E+00** |
| Sediment | Sediment | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.6E+04 | mg/kg | 1.0E-02 | mg/kg-d | 1.0E+00 | mg/kg-d | 1.0E-02 |
| | | | Ingestion | ANTIMONY | 2.0E+00 | mg/kg | 1.3E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 3.3E-03 |
| | | | Ingestion | ARSENIC | 8.8E+01 | mg/kg | 3.4E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.1E-01 |
| | | | Ingestion | CADMIUM | 7.7E+00 | mg/kg | 5.0E-06 | mg/kg-d | 1.0E-03 | mg/kg-d | 5.0E-03 |
| | | | Ingestion | CHROMIUM | 8.6E+00 | mg/kg | 5.6E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 1.9E-03 |
| | | | Ingestion | COBALT | 8.6E+00 | mg/kg | 5.6E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.9E-02 |
| | | | Ingestion | COPPER | 2.1E+02 | mg/kg | 1.4E-04 | mg/kg-d | 4.0E-02 | mg/kg-d | 3.4E-03 |
| | | | Ingestion | CYANIDE | 4.1E+00 | mg/kg | 2.7E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 4.4E-03 |
| | | | Ingestion | IRON | 2.7E+04 | mg/kg | 1.7E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 2.5E-02 |
| | | | Ingestion | LEAD | 1.0E+03 | mg/kg | 6.6E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.4E+02 | mg/kg | 9.2E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 3.8E-03 |
| | | | Ingestion | NICKEL | 3.7E+01 | mg/kg | 2.4E-05 | mg/kg-d | 2.0E-02 | mg/kg-d | 1.2E-03 |
| | | | Ingestion | THALLIUM | 4.7E-01 | mg/kg | 3.0E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 3.0E-02 |
| | | | Ingestion | VANADIUM | 2.6E+01 | mg/kg | 1.7E-05 | mg/kg-d | 5.0E-03 | mg/kg-d | 3.4E-03 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.6E-01 | mg/kg | 1.1E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 5.3E-03 |

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|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | KWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 7.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 7.0E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.3E-03 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 9.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 7.9E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 1.1E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 2.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **2.3E-01** |
| Sediment | Sediment | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.6E+04 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 2.0E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 8.8E+01 | mg/kg | 1.6E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.3E-02 |
| | | | Dermal | CADMIUM | 7.7E+00 | mg/kg | 4.6E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 1.9E-03 |
| | | | Dermal | CHROMIUM | 8.6E+00 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 8.6E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 2.1E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 4.1E+00 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 2.7E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.0E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.4E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | NICKEL | 3.7E+01 | mg/kg | NA | mg/kg-d | 8.0E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 4.7E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 2.6E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.6E-01 | mg/kg | 1.4E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 6.9E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 8.9E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 8.4E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.8E-03 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 1.1E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 9.5E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 1.3E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 3.3E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **6.5E-02** |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.4E+00 | mg/L | 1.3E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 1.3E-03 |
| | | | Ingestion | ANTIMONY | 3.7E-03 | mg/L | 3.4E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 8.5E-03 |
| | | | Ingestion | ARSENIC | 1.7E-02 | mg/L | 1.5E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.1E-02 |
| | | | Ingestion | CHROMIUM | 5.3E-03 | mg/L | 4.9E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 1.6E-03 |
| | | | Ingestion | COBALT | 1.6E-03 | mg/L | 1.5E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.9E-03 |
| | | | Ingestion | CYANIDE | 1.8E-03 | mg/L | 1.7E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 2.8E-03 |
| | | | Ingestion | IRON | 3.6E+00 | mg/L | 3.3E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 4.7E-03 |
| | | | Ingestion | LEAD | 2.9E-02 | mg/L | 2.7E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 8.0E-02 | mg/L | 7.3E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 3.1E-03 |
| | | | Ingestion | THALLIUM | 5.8E-03 | mg/L | 5.4E-06 | mg/kg-d | 1.0E-05 | mg/kg-d | 5.4E-01 |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **6E-01** |
| Surface Water | Surface Water | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.4E+00 | mg/L | 2.4E-04 | mg/kg-d | 1.0E+00 | mg/kg-d | 2.4E-04 |
| | | | Dermal | ANTIMONY | 3.7E-03 | mg/L | 6.4E-07 | mg/kg-d | 6.0E-05 | mg/kg-d | 1.1E-02 |
| | | | Dermal | ARSENIC | 1.7E-02 | mg/L | 2.9E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 9.7E-03 |
| | | | Dermal | CHROMIUM | 5.3E-03 | mg/L | 9.2E-07 | mg/kg-d | 7.5E-05 | mg/kg-d | 1.2E-02 |
| | | | Dermal | COBALT | 1.6E-03 | mg/L | 1.1E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.7E-04 |
| | | | Dermal | CYANIDE | 1.8E-03 | mg/L | 3.1E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 5.2E-04 |
| | | | Dermal | IRON | 3.6E+00 | mg/L | 6.2E-04 | mg/kg-d | 7.0E-01 | mg/kg-d | 8.9E-04 |
| | | | Dermal | LEAD | 2.9E-02 | mg/L | 5.1E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 8.0E-02 | mg/L | 1.4E-05 | mg/kg-d | 9.6E-04 | mg/kg-d | 1.4E-02 |
| | | | Dermal | THALLIUM | 5.8E-03 | mg/L | 1.0E-06 | mg/kg-d | 1.0E-05 | mg/kg-d | 1.0E-01 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1E-01** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **1E+00** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

**Ingestion - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{\text{IR x FS x EF x ED x CF}}{\text{BW x AT}}$$

= 6.5E-07 (Adolescent)

| | | |
|---|---|---|
| IR | Ingestion Rate (mg/day) | 100 |
| FS | Fraction from Contaminated Source | 1 |
| EF | Sediment Ingestion Exposure Frequency (days/year) | 105 |
| ED | Sediment Ingestion Exposure Duration (years) | 10 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 44 |
| AT | Averaging Time (days) | 3,650 |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{sediment} * IF * B$

(B) presented in Table 5.1

Non-cancer Hazard = Intake/RfD

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |

**Dermal - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{\text{SA x AF x EF x ED x CF}}{\text{BW x AT}}$$

| | | | |
|---|---|---|---|
| = | | 6.0E-06 | (Adolescent) |
| SA | Surface Area Exposed to Sediment ($cm^2$/day) | 4,639 | |
| AF | Sediment Skin Adherence Factor ($mg/cm^2$) | 0.2 | |
| EF | Sediment Dermal Exposure Frequency (days/year) | 105 | |
| ED | Sediment Dermal Exposure Duration (years) | 10 | |
| CF | Conversion Factor (kg/mg) | 0.000001 | |
| BW | Body Weight (kg) | 44 | |
| AT | Averaging Time (days) | 3,650 | |

$Intake_{derm}(mg/kg{\cdot}d) = EPC_{sediment} * IF * ABS$
(ABS) presented in Table 5.1
Non-cancer Hazard = Intake/RfD

**Ingestion - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{\text{IR x FR x ET x EF x ED}}{\text{BW x AT}}$$

| | | | |
|---|---|---|---|
| = | | 9.2E-04 | (Adolescent) |
| IR | Ingestion Rate - Surface Water (L/hour) | 0.071 | |
| FS | Fraction from Contaminated Source | 1 | |
| ET | Surface Water Exposure Time (hours/day) | 2.0 | |
| EF | Surface Water Ingestion Exposure Frequency (days/year) | 105 | |
| ED | Surface Water Exposure Duration (years) | 10 | |
| BW | Body Weight (kg) | 44.3 | |
| AT | Averaging Time (days) | 3,650 | |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{sw} * IF$
Non-cancer Hazard = Intake/RfD

**Dermal - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{\text{SA x EV x EF x ED}}{\text{BW x AT}}$$

| | | | |
|---|---|---|---|
| = | | 8.7E+01 | (Adolescent) |
| SA | Surface Area Exposed to Surface Water ($cm^2$) | 13,350 | |
| EF | Surface Water Dermal Exposure Frequency (days/year) | 105 | |
| ED | Surface Water Dermal Exposure Duration (years) | 10 | |
| EV | Events per Day (events/day) | 1 | |
| BW | Body Weight (kg) | 44 | |
| AT | Averaging Time (days) | 3,650 | |

$Intake_{derm}(mg/kg{\cdot}d)$ = IF x Absorbed Dose per Event ($DA_{Event}$)
($DA_{event}$) presented in Table 4.6
Non-cancer Hazard = Intake/RfD

**Table 7.15**
**Calculation of Chemical Non-cancer Hazards for Swimmer**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.0E+03 | mg/kg | 1.1E-02 | mg/kg-d | 1.0E+00 | mg/kg-d | 1.1E-02 |
| | | | Ingestion | ANTIMONY | 2.3E+00 | mg/kg | 8.7E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 2.2E-02 |
| | | | Ingestion | ARSENIC | 9.8E+00 | mg/kg | 2.3E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.6E-02 |
| | | | Ingestion | CHROMIUM | 8.0E-01 | mg/kg | 3.1E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 1.0E-03 |
| | | | Ingestion | COBALT | 6.2E+00 | mg/kg | 2.4E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.9E-02 |
| | | | Ingestion | COPPER | 1.0E+02 | mg/kg | 3.9E-04 | mg/kg-d | 4.0E-02 | mg/kg-d | 9.7E-03 |
| | | | Ingestion | CYANIDE | 2.7E+00 | mg/kg | 1.0E-05 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.7E-02 |
| | | | Ingestion | IRON | 8.0E+03 | mg/kg | 3.1E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 4.4E-02 |
| | | | Ingestion | LEAD | 1.7E+02 | mg/kg | 6.5E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 4.2E-04 | mg/kg-d | 2.4E-02 | mg/kg-d | 1.7E-02 |
| | | | Ingestion | THALLIUM | 8.6E-01 | mg/kg | 3.3E-06 | mg/kg-d | 1.0E-05 | mg/kg-d | 3.3E-01 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 6.5E-02 | mg/kg | 2.5E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.2E-02 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 7.6E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 5.6E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.9E-01 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 1.1E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 2.4E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | CHRYSENE | 3.0E+01 | mg/kg | 1.1E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 5.7E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 1.6E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | **TICs** | | | | | | | |
| | | | Ingestion | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 4.6E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **8.1E-01** |
| Sediment | Sediment | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.0E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 2.3E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 9.8E+00 | mg/kg | 2.7E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 9.0E-03 |
| | | | Dermal | CHROMIUM | 8.0E-01 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 6.2E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.0E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 2.7E+00 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 8.0E+03 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.7E+02 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 8.6E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 6.5E-02 | mg/kg | 8.3E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 4.1E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 2.3E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 1.7E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.8E-02 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 3.5E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 7.4E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | CHRYSENE | 3.0E+01 | mg/kg | 3.5E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 1.8E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 4.8E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | **TICs** | | | | | | | |
| | | | Dermal | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 1.4E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **7.1E-02** |
| Surface Water | Surface Water | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ARSENIC | 7.8E-03 | mg/L | 4.9E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.6E-01 |
| | | | Ingestion | CHROMIUM | 2.6E-03 | mg/L | 1.6E-05 | mg/kg-d | 3.0E-03 | mg/kg-d | 5.4E-03 |
| | | | Ingestion | COBALT | 2.1E-03 | mg/L | 1.3E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.5E-02 |
| | | | Ingestion | CYANIDE | 4.4E-03 | mg/L | 2.8E-05 | mg/kg-d | 6.0E-04 | mg/kg-d | 4.7E-02 |
| | | | Ingestion | IRON | 1.1E+01 | mg/L | 7.1E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.0E-01 |
| | | | Ingestion | MANGANESE | 9.5E-01 | mg/L | 6.0E-03 | mg/kg-d | 2.4E-02 | mg/kg-d | 2.5E-01 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 4.2E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 2.0E-04 | mg/L | 1.3E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.2E-03 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 8.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 1.1E-05 | mg/kg-d | 2.0E-02 | mg/kg-d | 5.6E-04 |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 4.3E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 5.5E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **6E-01** |
| Surface Water | Surface Water | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ARSENIC | 7.8E-03 | mg/L | 2.6E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 8.7E-03 |
| | | | Dermal | CHROMIUM | 2.6E-03 | mg/L | 8.6E-07 | mg/kg-d | 7.5E-05 | mg/kg-d | 1.1E-02 |
| | | | Dermal | COBALT | 2.1E-03 | mg/L | 2.8E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 9.5E-04 |
| | | | Dermal | CYANIDE | 4.4E-03 | mg/L | 1.5E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 2.5E-03 |
| | | | Dermal | IRON | 1.1E+01 | mg/L | 3.8E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 5.4E-03 |
| | | | Dermal | MANGANESE | 9.5E-01 | mg/L | 3.2E-04 | mg/kg-d | 9.6E-04 | mg/kg-d | 3.3E-01 |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | SL | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 3.0E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 2.0E-04 | mg/L | 1.3E-04 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.4E-01 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 5.2E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 3.7E-03 | mg/kg-d | 2.0E-02 | mg/kg-d | 1.8E-01 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 4.3E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 7.1E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1E+00** |
| **Exposure Point Total (SL)** | | | | | | | | | | | **2E+00** |
| Sediment | Sediment | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.5E+04 | mg/kg | 5.6E-02 | mg/kg-d | 1.0E+00 | mg/kg-d | 5.6E-02 |
| | | | Ingestion | ANTIMONY | 7.3E+00 | mg/kg | 2.8E-05 | mg/kg-d | 4.0E-04 | mg/kg-d | 7.0E-02 |
| | | | Ingestion | ARSENIC | 2.8E+02 | mg/kg | 6.5E-04 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.2E+00 |
| | | | Ingestion | CADMIUM | 1.3E+01 | mg/kg | 5.1E-05 | mg/kg-d | 1.0E-03 | mg/kg-d | 5.1E-02 |
| | | | Ingestion | CHROMIUM | 7.8E+00 | mg/kg | 3.0E-05 | mg/kg-d | 3.0E-03 | mg/kg-d | 9.9E-03 |
| | | | Ingestion | COBALT | 1.7E+01 | mg/kg | 6.4E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.1E-01 |
| | | | Ingestion | COPPER | 1.8E+02 | mg/kg | 6.7E-04 | mg/kg-d | 4.0E-02 | mg/kg-d | 1.7E-02 |
| | | | Ingestion | CYANIDE | 1.5E+01 | mg/kg | 5.8E-05 | mg/kg-d | 6.0E-04 | mg/kg-d | 9.7E-02 |
| | | | Ingestion | IRON | 4.2E+04 | mg/kg | 1.6E-01 | mg/kg-d | 7.0E-01 | mg/kg-d | 2.3E-01 |
| | | | Ingestion | LEAD | 1.5E+03 | mg/kg | 5.7E-03 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 4.2E-04 | mg/kg-d | 2.4E-02 | mg/kg-d | 1.8E-02 |
| | | | Ingestion | VANADIUM | 5.6E+01 | mg/kg | 2.1E-04 | mg/kg-d | 5.0E-03 | mg/kg-d | 4.3E-02 |
| | | | Ingestion | ZINC | 1.1E+03 | mg/kg | 4.3E-03 | mg/kg-d | 3.0E-01 | mg/kg-d | 1.4E-02 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 8.0E-02 | mg/kg | 3.1E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.5E-02 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 5.2E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 5.3E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.8E-02 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 7.8E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 7.5E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 1.1E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 2.9E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | NAPHTHALENE | 2.8E+00 | mg/kg | 1.1E-05 | mg/kg-d | 2.0E-02 | mg/kg-d | 5.5E-04 |
| | | | Ingestion | **VOCs** | | | | | | | |
| | | | Ingestion | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | 2.6E-07 | mg/kg-d | 5.0E-04 | mg/kg-d | 5.1E-04 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **3.0E+00** |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.5E+04 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 7.3E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 2.8E+02 | mg/kg | 7.7E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.6E-01 |
| | | | Dermal | CADMIUM | 1.3E+01 | mg/kg | 1.2E-07 | mg/kg-d | 2.5E-05 | mg/kg-d | 4.9E-03 |
| | | | Dermal | CHROMIUM | 7.8E+00 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 1.7E+01 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.8E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 1.5E+01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 4.2E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.5E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 5.6E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | ZINC | 1.1E+03 | mg/kg | NA | mg/kg-d | 3.0E-01 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 8.0E-02 | mg/kg | 1.0E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 5.1E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 1.6E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 1.6E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.4E-03 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 2.4E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 2.3E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 3.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 8.8E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | NAPHTHALENE | 2.8E+00 | mg/kg | 3.4E-06 | mg/kg-d | 2.0E-02 | mg/kg-d | 1.7E-04 |
| | | | Dermal | **VOCs** | | | | | | | |
| | | | Dermal | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | NA | mg/kg-d | 5.0E-04 | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **2.7E-01** |
| Surface Water | Surface Water | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.3E+00 | mg/L | 8.1E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 8.1E-03 |
| | | | Ingestion | ANTIMONY | 1.2E-03 | mg/L | 7.2E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 1.8E-02 |
| | | | Ingestion | ARSENIC | 3.1E-02 | mg/L | 1.9E-04 | mg/kg-d | 3.0E-04 | mg/kg-d | 6.4E-01 |
| | | | Ingestion | CADMIUM | 6.2E-04 | mg/L | 3.9E-06 | mg/kg-d | 5.0E-04 | mg/kg-d | 7.8E-03 |
| | | | Ingestion | CHROMIUM | 4.5E-03 | mg/L | 2.8E-05 | mg/kg-d | 3.0E-03 | mg/kg-d | 9.4E-03 |
| | | | Ingestion | COBALT | 1.0E-03 | mg/L | 6.4E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.1E-02 |
| | | | Ingestion | CYANIDE | 2.0E-03 | mg/L | 1.3E-05 | mg/kg-d | 6.0E-04 | mg/kg-d | 2.1E-02 |
| | | | Ingestion | IRON | 6.5E+00 | mg/L | 4.1E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 5.8E-02 |
| | | | Ingestion | LEAD | 2.6E-02 | mg/L | 1.6E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 7.0E-02 | mg/L | 4.4E-04 | mg/kg-d | 2.4E-02 | mg/kg-d | 1.8E-02 |
| | | | Ingestion | THALLIUM | 1.2E-03 | mg/L | 7.8E-06 | mg/kg-d | 1.0E-05 | mg/kg-d | 7.8E-01 |
| | | | Ingestion | VANADIUM | 2.5E-03 | mg/L | 1.5E-05 | mg/kg-d | 5.0E-03 | mg/kg-d | 3.1E-03 |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | BWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 3.4E-05 | mg/L | 2.1E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.1E-04 |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **2E+00** |
| Surface Water | Surface Water | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.3E+00 | mg/L | 4.3E-04 | mg/kg-d | 1.0E+00 | mg/kg-d | 4.3E-04 |
| | | | Dermal | ANTIMONY | 1.2E-03 | mg/L | 3.8E-07 | mg/kg-d | 6.0E-05 | mg/kg-d | 6.4E-03 |
| | | | Dermal | ARSENIC | 3.1E-02 | mg/L | 1.0E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.4E-02 |
| | | | Dermal | CADMIUM | 6.2E-04 | mg/L | 2.1E-07 | mg/kg-d | 2.5E-05 | mg/kg-d | 8.3E-03 |
| | | | Dermal | CHROMIUM | 4.5E-03 | mg/L | 1.5E-06 | mg/kg-d | 7.5E-05 | mg/kg-d | 2.0E-02 |
| | | | Dermal | COBALT | 1.0E-03 | mg/L | 1.4E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.5E-04 |
| | | | Dermal | CYANIDE | 2.0E-03 | mg/L | 6.7E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.1E-03 |
| | | | Dermal | IRON | 6.5E+00 | mg/L | 2.2E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 3.1E-03 |
| | | | Dermal | LEAD | 2.6E-02 | mg/L | 8.6E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 7.0E-02 | mg/L | 2.3E-05 | mg/kg-d | 9.6E-04 | mg/kg-d | 2.4E-02 |
| | | | Dermal | THALLIUM | 1.2E-03 | mg/L | 4.1E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 4.1E-02 |
| | | | Dermal | VANADIUM | 2.5E-03 | mg/L | 8.2E-07 | mg/kg-d | 1.3E-04 | mg/kg-d | 6.3E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 3.4E-05 | mg/L | 2.3E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.5E-02 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **2E-01** |
| **Exposure Point Total (BWL)** | | | | | | | | | | | **5E+00** |
| Sediment | Sediment | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.6E+04 | mg/kg | 6.2E-02 | mg/kg-d | 1.0E+00 | mg/kg-d | 6.2E-02 |
| | | | Ingestion | ANTIMONY | 2.0E+00 | mg/kg | 7.8E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 2.0E-02 |
| | | | Ingestion | ARSENIC | 8.8E+01 | mg/kg | 2.0E-04 | mg/kg-d | 3.0E-04 | mg/kg-d | 6.8E-01 |
| | | | Ingestion | CADMIUM | 7.7E+00 | mg/kg | 3.0E-05 | mg/kg-d | 1.0E-03 | mg/kg-d | 3.0E-02 |
| | | | Ingestion | CHROMIUM | 8.6E+00 | mg/kg | 3.3E-05 | mg/kg-d | 3.0E-03 | mg/kg-d | 1.1E-02 |
| | | | Ingestion | COBALT | 8.6E+00 | mg/kg | 3.3E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.1E-01 |
| | | | Ingestion | COPPER | 2.1E+02 | mg/kg | 8.0E-04 | mg/kg-d | 4.0E-02 | mg/kg-d | 2.0E-02 |
| | | | Ingestion | CYANIDE | 4.1E+00 | mg/kg | 1.6E-05 | mg/kg-d | 6.0E-04 | mg/kg-d | 2.6E-02 |
| | | | Ingestion | IRON | 2.7E+04 | mg/kg | 1.0E-01 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.5E-01 |
| | | | Ingestion | LEAD | 1.0E+03 | mg/kg | 3.9E-03 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.4E+02 | mg/kg | 5.4E-04 | mg/kg-d | 2.4E-02 | mg/kg-d | 2.3E-02 |
| | | | Ingestion | NICKEL | 3.7E+01 | mg/kg | 1.4E-04 | mg/kg-d | 2.0E-02 | mg/kg-d | 7.0E-03 |
| | | | Ingestion | THALLIUM | 4.7E-01 | mg/kg | 1.8E-06 | mg/kg-d | 1.0E-05 | mg/kg-d | 1.8E-01 |
| | | | Ingestion | VANADIUM | 2.6E+01 | mg/kg | 1.0E-04 | mg/kg-d | 5.0E-03 | mg/kg-d | 2.0E-02 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.6E-01 | mg/kg | 6.3E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 3.1E-02 |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | KWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 4.4E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 4.1E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.4E-02 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 5.3E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 4.6E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 6.3E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 1.6E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **1.4E+00** |
| Sediment | Sediment | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.6E+04 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 2.0E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 8.8E+01 | mg/kg | 2.4E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 8.0E-02 |
| | | | Dermal | CADMIUM | 7.7E+00 | mg/kg | 7.0E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 2.8E-03 |
| | | | Dermal | CHROMIUM | 8.6E+00 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 8.6E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 2.1E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 4.1E+00 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 2.7E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.0E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.4E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | NICKEL | 3.7E+01 | mg/kg | NA | mg/kg-d | 8.0E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 4.7E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 2.6E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.6E-01 | mg/kg | 2.1E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.0E-02 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 1.4E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 1.3E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.2E-03 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 1.6E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 1.4E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 1.9E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 4.9E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **9.8E-02** |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.4E+00 | mg/L | 8.6E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 8.6E-03 |
| | | | Ingestion | ANTIMONY | 3.7E-03 | mg/L | 2.3E-05 | mg/kg-d | 4.0E-04 | mg/kg-d | 5.8E-02 |
| | | | Ingestion | ARSENIC | 1.7E-02 | mg/L | 1.1E-04 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.5E-01 |
| | | | Ingestion | CHROMIUM | 5.3E-03 | mg/L | 3.4E-05 | mg/kg-d | 3.0E-03 | mg/kg-d | 1.1E-02 |
| | | | Ingestion | COBALT | 1.6E-03 | mg/L | 1.0E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.4E-02 |
| | | | Ingestion | CYANIDE | 1.8E-03 | mg/L | 1.1E-05 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.9E-02 |
| | | | Ingestion | IRON | 3.6E+00 | mg/L | 2.3E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 3.2E-02 |
| | | | Ingestion | LEAD | 2.9E-02 | mg/L | 1.9E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 8.0E-02 | mg/L | 5.0E-04 | mg/kg-d | 2.4E-02 | mg/kg-d | 2.1E-02 |
| | | | Ingestion | THALLIUM | 5.8E-03 | mg/L | 3.7E-05 | mg/kg-d | 1.0E-05 | mg/kg-d | 3.7E+00 |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **4E+00** |
| Surface Water | Surface Water | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.4E+00 | mg/L | 4.6E-04 | mg/kg-d | 1.0E+00 | mg/kg-d | 4.6E-04 |
| | | | Dermal | ANTIMONY | 3.7E-03 | mg/L | 1.2E-06 | mg/kg-d | 6.0E-05 | mg/kg-d | 2.1E-02 |
| | | | Dermal | ARSENIC | 1.7E-02 | mg/L | 5.6E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.9E-02 |
| | | | Dermal | CHROMIUM | 5.3E-03 | mg/L | 1.8E-06 | mg/kg-d | 7.5E-05 | mg/kg-d | 2.4E-02 |
| | | | Dermal | COBALT | 1.6E-03 | mg/L | 2.1E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.1E-04 |
| | | | Dermal | CYANIDE | 1.8E-03 | mg/L | 6.0E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.0E-03 |
| | | | Dermal | IRON | 3.6E+00 | mg/L | 1.2E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.7E-03 |
| | | | Dermal | LEAD | 2.9E-02 | mg/L | 9.8E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 8.0E-02 | mg/L | 2.7E-05 | mg/kg-d | 9.6E-04 | mg/kg-d | 2.8E-02 |
| | | | Dermal | THALLIUM | 5.8E-03 | mg/L | 1.9E-06 | mg/kg-d | 1.0E-05 | mg/kg-d | 1.9E-01 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **3E-01** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **6E+00** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

**Ingestion - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{\text{IR x FS x EF x ED x CF}}{\text{BW x AT}}$$

= 3.8E-06 (Child)

| | | |
|---|---|---|
| IR | Ingestion Rate (mg/day) | 200 |
| FS | Fraction from Contaminated Source | 1 |
| EF | Sediment Ingestion Exposure Frequency (days/year) | 105 |
| ED | Sediment Ingestion Exposure Duration (years) | 6 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 15 |
| AT | Averaging Time (days) | 2,190 |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{sediment} * IF * B$

(B) presented in Table 5.1

Non-cancer Hazard = Intake/RfD

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |

**Dermal - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{SA \times AF \times EF \times ED \times CF}{BW \times AT}$$

| | | | |
|---|---|---|---|
| = | 9.1E-06 | (Child) | |

$Intake_{derm}(mg/kg{\cdot}d) = EPC_{sediment} * IF * ABS$
(ABS) presented in Table 5.1
Non-cancer Hazard = Intake/RfD

| | | |
|---|---|---|
| SA | Surface Area Exposed to Sediment ($cm^2$/day) | 2,373 |
| AF | Sediment Skin Adherence Factor ($mg/cm^2$) | 0.2 |
| EF | Sediment Dermal Exposure Frequency (days/year) | 105 |
| ED | Sediment Dermal Exposure Duration (years) | 6 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 15 |
| AT | Averaging Time (days) | 2,190 |

**Ingestion - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{IR \times FR \times ET \times EF \times ED}{BW \times AT}$$

| | | | |
|---|---|---|---|
| = | 6.3E-03 | (Child) | |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{sw} * IF$
Non-cancer Hazard = Intake/RfD

| | | |
|---|---|---|
| IR | Ingestion Rate - Surface Water (L/hour) | 0.12 |
| FS | Fraction from Contaminated Source | 1 |
| ET | Surface Water Exposure Time (hours/day) | 2.7 |
| EF | Surface Water Ingestion Exposure Frequency (days/year) | 105 |
| ED | Surface Water Exposure Duration (years) | 6 |
| BW | Body Weight (kg) | 15 |
| AT | Averaging Time (days) | 2,190 |

**Dermal - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{SA \times EV \times EF \times ED}{BW \times AT}$$

| | | | |
|---|---|---|---|
| = | 1.2E+02 | (Child) | |

$Intake_{derm}(mg/kg{\cdot}d)$ = IF x Absorbed Dose per Event ($DA_{Event}$)
($DA_{event}$) presented in Table 4.6
Non-cancer Hazard = Intake/RfD

| | | |
|---|---|---|
| SA | Surface Area Exposed to Surface Water ($cm^2$) | 6,365 |
| EF | Surface Water Dermal Exposure Frequency (days/year) | 105 |
| ED | Surface Water Dermal Exposure Duration (years) | 6 |
| EV | Events per Day (events/day) | 1 |
| BW | Body Weight (kg) | 15 |
| AT | Averaging Time (days) | 2,190 |

**Table 7.16**
**Calculation of Chemical Non-cancer Hazards for Angler**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Angler |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Fish | Tissue | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ARSENIC | 1.0E-02 | mg/kg | 3.3E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.1E-02 |
| | | | Ingestion | CHROMIUM | 2.2E-01 | mg/kg | 7.0E-05 | mg/kg-d | 3.0E-03 | mg/kg-d | 2.3E-02 |
| | | | Ingestion | LEAD | 1.1E-01 | mg/kg | 3.6E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | 4,4'-DDD | 1.2E-02 | mg/kg | 3.9E-06 | mg/kg-d | 3.0E-05 | mg/kg-d | 1.3E-01 |
| | | | Ingestion | 4,4'-DDE | 1.5E-02 | mg/kg | 5.0E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.7E-02 |
| | | | Ingestion | AROCLOR-1254 | 5.4E-02 | mg/kg | 1.7E-05 | mg/kg-d | 2.0E-05 | mg/kg-d | 8.7E-01 |
| | | | Ingestion | AROCLOR-1260 | 2.2E-02 | mg/kg | 7.2E-06 | mg/kg-d | 2.0E-05 | mg/kg-d | 3.6E-01 |
| | | | **Exposure Route Total [Fish-Ingestion]** | | | | | | | | **1E+00** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **1E+00** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

**Ingestion - Fish**

$$\text{Intake Factor (IF)} = \frac{\text{IR} \times \text{EF} \times \text{ED}}{\text{BW} \times \text{AT}} = 3.3\text{E-}04 \text{ (Adult)}$$

$\text{Intake}_{ing}(\text{mg/kg·d}) = \text{EPC}_{fish} * \text{IF}$

Non-cancer Hazard = Intake/RfD

| | | |
|---|---|---|
| IR | Fish Ingestion Rate (kg/day) | 0.026 |
| EF | Fish Ingestion Exposure Frequency (days/year) | 365 |
| ED | Exposure Duration (years) | 26 |
| BW | Body Weight (kg) | 80 |
| AT | Averaging Time (days) | 9,490 |

**Table 7.17**
**Calculation of Chemical Non-cancer Hazards for Angler**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Angler |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Fish | Tissue | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ARSENIC | 1.0E-02 | mg/kg | 3.9E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.3E-02 |
| | | | Ingestion | CHROMIUM | 2.2E-01 | mg/kg | 8.3E-05 | mg/kg-d | 3.0E-03 | mg/kg-d | 2.8E-02 |
| | | | Ingestion | LEAD | 1.1E-01 | mg/kg | 4.2E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | 4,4'-DDD | 1.2E-02 | mg/kg | 4.6E-06 | mg/kg-d | 3.0E-05 | mg/kg-d | 1.5E-01 |
| | | | Ingestion | 4,4'-DDE | 1.5E-02 | mg/kg | 5.9E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.0E-02 |
| | | | Ingestion | AROCLOR-1254 | 5.4E-02 | mg/kg | 2.1E-05 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.0E+00 |
| | | | Ingestion | AROCLOR-1260 | 2.2E-02 | mg/kg | 8.6E-06 | mg/kg-d | 2.0E-05 | mg/kg-d | 4.3E-01 |
| | | | **Exposure Route Total [Fish-Ingestion]** | | | | | | | | **2E+00** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **2E+00** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

**Ingestion - Fish**

$$\text{Intake Factor (IF)} = \frac{\text{IR x EF x ED}}{\text{BW x AT}} = \text{3.8E-04 (Adolescent)}$$

| | | |
|---|---|---|
| IR | Fish Ingestion Rate (kg/day) | 0.017 |
| EF | Fish Ingestion Exposure Frequency (days/year) | 365 |
| ED | Exposure Duration (years) | 10 |
| BW | Body Weight (kg) | 44 |
| AT | Averaging Time (days) | 3,650 |

$Intake_{ing}(mg/kg \cdot d) = EPC_{fish} * IF$

Non-cancer Hazard = Intake/RfD

**Table 7.18**
**Calculation of Chemical Non-cancer Hazards for Angler**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Angler |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Fish | Tissue | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ARSENIC | 1.0E-02 | mg/kg | 6.1E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.0E-02 |
| | | | Ingestion | CHROMIUM | 2.2E-01 | mg/kg | 1.3E-04 | mg/kg-d | 3.0E-03 | mg/kg-d | 4.3E-02 |
| | | | Ingestion | LEAD | 1.1E-01 | mg/kg | 6.6E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | 4,4'-DDD | 1.2E-02 | mg/kg | 7.1E-06 | mg/kg-d | 3.0E-05 | mg/kg-d | 2.4E-01 |
| | | | Ingestion | 4,4'-DDE | 1.5E-02 | mg/kg | 9.2E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.1E-02 |
| | | | Ingestion | AROCLOR-1254 | 5.4E-02 | mg/kg | 3.2E-05 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.6E+00 |
| | | | Ingestion | AROCLOR-1260 | 2.2E-02 | mg/kg | 1.3E-05 | mg/kg-d | 2.0E-05 | mg/kg-d | 6.7E-01 |
| | | | **Exposure Route Total [Fish-Ingestion]** | | | | | | | | **3E+00** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **3E+00** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

**Ingestion - Fish**

$$\text{Intake Factor (IF)} = \frac{\text{IR x EF x ED}}{\text{BW x AT}} = \text{6.0E-04 (Child)}$$

| | | |
|---|---|---|
| IR | Fish Ingestion Rate (kg/day) | 0.009 |
| EF | Fish Ingestion Exposure Frequency (days/year) | 365 |
| ED | Exposure Duration (years) | 6 |
| BW | Body Weight (kg) | 15 |
| AT | Averaging Time (days) | 2,190 |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{fish} * IF$

Non-cancer Hazard = Intake/RfD

**Table 9.1**
**Chemical Cancer Risks and Non-cancer Hazards**
**Reasonable Maximum Exposure**
**Recreator - Adult**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Sediment | Sediment | SL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 4.5E-04 | NA | | **4.5E-04** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 8.5E-04 | NA | | **8.5E-04** | Hematological | NA |
| | | | ARSENIC | 5.0E-07 | 3.0E-07 | | **7.9E-07** | 3.0E-03 | 1.8E-03 | | **4.8E-03** | Skin | Respiratory |
| | | | CHROMIUM | 2.2E-08 | NA | | **2.2E-08** | 4.0E-05 | NA | | **4.0E-05** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 3.1E-03 | NA | | **3.1E-03** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 3.8E-04 | NA | | **3.8E-04** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 6.7E-04 | NA | | **6.7E-04** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 1.7E-03 | NA | | **1.7E-03** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 6.9E-04 | NA | | **6.9E-04** | Nervous system | Nervous system |
| | | | THALLIUM | NA | NA | | **NA** | 1.3E-02 | NA | | **1.3E-02** | Skin | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 7.3E-09 | 1.2E-08 | | **2.0E-08** | 4.9E-04 | 8.3E-04 | | **1.3E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 1.1E-07 | 1.7E-07 | | **2.8E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 8.2E-07 | 1.3E-06 | | **2.1E-06** | 7.4E-03 | 1.2E-02 | | **1.9E-02** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 1.7E-07 | 2.6E-07 | | **4.2E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 3.5E-09 | 5.5E-09 | | **9.0E-09** | NA | NA | | **NA** | NA | NA |
| | | | CHRYSENE | 1.7E-09 | 2.6E-09 | | **4.3E-09** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 8.4E-08 | 1.3E-07 | | **2.2E-07** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 2.3E-08 | 3.6E-08 | | **5.8E-08** | NA | NA | | **NA** | NA | NA |
| | | | **TICs** | | | | | | | | | | |
| | | | BENZO[J]FLUORANTHENE | 8.1E-07 | 1.3E-06 | | **2.1E-06** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | SL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | | 4.0E-08 | | **4.0E-08** | | 2.4E-04 | | **2.4E-04** | Skin | Respiratory |
| | | | CHROMIUM | | 1.7E-07 | | **1.7E-07** | | 3.1E-04 | | **3.1E-04** | None Observed | Respiratory |
| | | | COBALT | | NA | | **NA** | | 2.6E-05 | | **2.6E-05** | Endocrine | Endocrine |
| | | | CYANIDE | | NA | | **NA** | | 6.7E-05 | | **6.7E-05** | Reproductive | Endocrine |
| | | | IRON | | NA | | **NA** | | 1.5E-04 | | **1.5E-04** | Gastrointestinal | NA |
| | | | MANGANESE | | NA | | **NA** | | 9.0E-03 | | **9.0E-03** | Nervous system | Nervous system |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | | 4.9E-08 | | **4.9E-08** | | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | | 2.2E-06 | | **2.2E-06** | | 2.0E-02 | | **2.0E-02** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | | 8.6E-08 | | **8.6E-08** | | NA | | **NA** | NA | NA |
| | | | BIS(2-ETHYLHEXYL) PHTHALATE | | 8.6E-07 | | **8.6E-07** | | 8.3E-03 | | **8.3E-03** | Hepatic | NA |
| | | | DIBENZO(A,H)ANTHRACENE | | 7.2E-07 | | **7.2E-07** | | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | | 1.2E-07 | | **1.2E-07** | | NA | | **NA** | NA | NA |
| **Exposure Point Total - SL** | | | | 2.5E-06 | 7.7E-06 | 0.0E+00 | **1E-05** | 3.2E-02 | 5.2E-02 | 0.0E+00 | **8E-02** | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| | | | | | | | | **Total Organ HI (SL)** | | | | | |
| | | | | | | | | Developmental | | | 4E-02 | | |
| | | | | | | | | Endocrine | | | 3E-03 | | |
| | | | | | | | | Gastrointestinal | | | 2E-03 | | |
| | | | | | | | | Hematological | | | 9E-04 | | |
| | | | | | | | | Hepatic | | | 8E-03 | | |
| | | | | | | | | Immunological | | | 1E-03 | | |
| | | | | | | | | Nervous System | | | 1E-02 | | |
| | | | | | | | | None Observed | | | 4E-04 | | |
| | | | | | | | | Reproductive | | | 7E-04 | | |
| | | | | | | | | Skin | | | 2E-02 | | |
| Soil | Soil | BWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | NA | **NA** | 2.0E-03 | NA | 3.2E-05 | **2.0E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | NA | **NA** | 1.8E-03 | NA | NA | **1.8E-03** | Hematological | NA |
| | | | ARSENIC | 2.0E-05 | 4.2E-06 | 7.8E-09 | **2.4E-05** | 1.2E-01 | 2.5E-02 | 3.2E-04 | **1.4E-01** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | 6.5E-11 | **6.5E-11** | 1.2E-03 | 2.0E-04 | 9.7E-06 | **1.4E-03** | Renal | Renal |
| | | | CHROMIUM | 1.9E-07 | NA | 2.7E-09 | **1.9E-07** | 3.4E-04 | NA | 8.5E-07 | **3.5E-04** | None Observed | Respiratory |
| | | | COBALT | NA | NA | 1.5E-10 | **1.5E-10** | 1.9E-03 | NA | 7.7E-06 | **1.9E-03** | Endocrine | Endocrine |
| | | | CYANIDE | NA | NA | NA | **NA** | 5.1E-04 | NA | 1.4E-03 | **1.9E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | NA | **NA** | 4.6E-03 | NA | NA | **4.6E-03** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | NA | **NA** | NA | NA | NA | **NA** | NA | NA |
| | | | THALLIUM | NA | NA | NA | **NA** | 4.4E-02 | NA | NA | **4.4E-02** | Skin | NA |
| | | | VANADIUM | NA | NA | NA | **NA** | 1.3E-03 | NA | 5.3E-06 | **1.3E-03** | Systemic | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 2.6E-08 | 1.4E-08 | 1.3E-12 | **4.0E-08** | 2.3E-04 | 1.3E-04 | 2.9E-06 | **3.6E-04** | Developmental | Developmental |
| Sediment | Sediment | BWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 2.2E-03 | NA | | **2.2E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 2.7E-03 | NA | | **2.7E-03** | Hematological | NA |
| | | | ARSENIC | 1.4E-05 | 8.6E-06 | | **2.3E-05** | 8.5E-02 | 5.2E-02 | | **1.4E-01** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | | **NA** | 2.0E-03 | 9.7E-04 | | **3.0E-03** | Renal | Renal |
| | | | CHROMIUM | 2.2E-07 | NA | | **2.2E-07** | 3.9E-04 | NA | | **3.9E-04** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 8.4E-03 | NA | | **8.4E-03** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 6.6E-04 | NA | | **6.6E-04** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 3.8E-03 | NA | | **3.8E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 9.1E-03 | NA | | **9.1E-03** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 6.9E-04 | NA | | **6.9E-04** | Nervous system | Nervous system |
| | | | VANADIUM | NA | NA | | **NA** | 1.7E-03 | NA | | **1.7E-03** | Systemic | Respiratory |
| | | | ZINC | NA | NA | | **NA** | 5.6E-04 | NA | | **5.6E-04** | Hematological | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 9.0E-09 | 1.5E-08 | | **2.4E-08** | 6.0E-04 | 1.0E-03 | | **1.6E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 7.5E-09 | 1.2E-08 | | **1.9E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 7.7E-08 | 1.2E-07 | | **2.0E-07** | 6.9E-04 | 1.1E-03 | | **1.8E-03** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 1.1E-08 | 1.8E-08 | | **2.9E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 1.1E-09 | 1.7E-09 | | **2.8E-09** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 1.6E-08 | 2.5E-08 | | **4.1E-08** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 4.2E-09 | 6.5E-09 | | **1.1E-08** | NA | NA | | **NA** | NA | NA |
| | | | NAPHTHALENE | NA | NA | | **NA** | 2.1E-05 | 3.4E-05 | | **5.5E-05** | Systemic | Respiratory |
| | | | **VOCs** | | | | | | | | | | |
| | | | TRICHLOROETHYLENE (TCE) | 1.7E-10 | NA | | **1.7E-10** | 2.0E-05 | NA | | **2.0E-05** | Developmental | Developmental |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Surface Water | Surface Water | BWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | | NA | | **NA** | | 1.2E-05 | | **1.2E-05** | Nervous system | Nervous system |
| | | | ANTIMONY | | NA | | **NA** | | 1.7E-04 | | **1.7E-04** | Hematological | NA |
| | | | ARSENIC | | 1.5E-07 | | **1.5E-07** | | 9.3E-04 | | **9.3E-04** | Skin | Respiratory |
| | | | CADMIUM | | NA | | **NA** | | 2.3E-04 | | **2.3E-04** | Renal | Renal |
| | | | CHROMIUM | | 3.0E-07 | | **3.0E-07** | | 5.4E-04 | | **5.4E-04** | None Observed | Respiratory |
| | | | COBALT | | NA | | **NA** | | 1.2E-05 | | **1.2E-05** | Endocrine | Endocrine |
| | | | CYANIDE | | NA | | **NA** | | 3.0E-05 | | **3.0E-05** | Reproductive | Endocrine |
| | | | IRON | | NA | | **NA** | | 8.4E-05 | | **8.4E-05** | Gastrointestinal | NA |
| | | | LEAD | | NA | | **NA** | | NA | | **NA** | NA | NA |
| | | | MANGANESE | | NA | | **NA** | | 6.6E-04 | | **6.6E-04** | Nervous system | Nervous system |
| | | | THALLIUM | | NA | | **NA** | | 1.1E-03 | | **1.1E-03** | Skin | NA |
| | | | VANADIUM | | NA | | **NA** | | 1.7E-04 | | **1.7E-04** | Systemic | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | | 3.8E-07 | | **3.8E-07** | | 3.4E-03 | | **3.4E-03** | Developmental | Developmental |
| **Exposure Point Total - BWL** | | | | 3.5E-05 | 1.4E-05 | 1.1E-08 | **5E-05** | 2.9E-01 | 8.7E-02 | 1.7E-03 | **4E-01** | | |
| | | | | | | | | **Total Organ HI (BWL)** | | | | | |
| | | | | | | | | Developmental | | | 6E-03 | | |
| | | | | | | | | Endocrine | | | 1E-02 | | |
| | | | | | | | | Gastrointestinal | | | 1E-02 | | |
| | | | | | | | | Hematological | | | 5E-03 | | |
| | | | | | | | | Immunological | | | 2E-03 | | |
| | | | | | | | | Nervous System | | | 6E-03 | | |
| | | | | | | | | None Observed | | | 1E-03 | | |
| | | | | | | | | Renal | | | 5E-03 | | |
| | | | | | | | | Reproductive | | | 4E-03 | | |
| | | | | | | | | Respiratory | | | 3E-04 | | |
| | | | | | | | | Skin | | | 3E-01 | | |
| | | | | | | | | Systemic | | | 3E-03 | | |
| Soil | Soil | HC | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | NA | **NA** | 4.7E-03 | NA | 7.8E-05 | **4.8E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | NA | **NA** | 6.8E-03 | NA | NA | **6.8E-03** | Hematological | NA |
| | | | ARSENIC | 8.5E-05 | 1.8E-05 | 3.4E-08 | **1.0E-04** | 5.1E-01 | 1.1E-01 | 1.4E-03 | **6.2E-01** | Skin | Respiratory |
| | | | BARIUM | NA | NA | NA | **NA** | 5.0E-03 | NA | 1.6E-04 | **5.2E-03** | Renal | Reproductive |
| | | | CADMIUM | NA | NA | 8.2E-11 | **8.2E-11** | 1.5E-03 | 2.5E-04 | 1.2E-05 | **1.8E-03** | Renal | Renal |
| | | | CHROMIUM | 3.1E-06 | NA | 4.3E-08 | **3.1E-06** | 5.5E-03 | NA | 1.4E-05 | **5.5E-03** | None Observed | Respiratory |
| | | | COBALT | NA | NA | 8.9E-10 | **8.9E-10** | 1.1E-02 | NA | 4.4E-05 | **1.1E-02** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | NA | **NA** | 1.8E-03 | NA | NA | **1.8E-03** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | NA | **NA** | 4.2E-02 | NA | 1.1E-01 | **1.5E-01** | Reproductive | Endocrine |
| | | | IRON | NA | NA | NA | **NA** | 2.0E-02 | NA | NA | **2.0E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | NA | **NA** | NA | NA | NA | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | NA | **NA** | 7.2E-03 | NA | 2.9E-04 | **7.5E-03** | Nervous system | Nervous system |
| | | | MERCURY | NA | NA | NA | **NA** | 1.3E-03 | NA | 1.1E-07 | **1.3E-03** | Immunological | Nervous system |
| | | | NICKEL | NA | NA | 5.6E-11 | **5.6E-11** | 3.5E-04 | NA | 6.4E-06 | **3.6E-04** | Systemic | Respiratory |
| | | | THALLIUM | NA | NA | NA | **NA** | 3.4E-02 | NA | NA | **3.4E-02** | Skin | NA |
| | | | VANADIUM | NA | NA | NA | **NA** | 3.1E-03 | NA | 1.3E-05 | **3.1E-03** | Systemic | Respiratory |
| | | | ZINC | NA | NA | NA | **NA** | 9.1E-04 | NA | NA | **9.1E-04** | Hematological | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 2.1E-08 | 1.2E-08 | 1.5E-09 | **3.5E-08** | 1.4E-03 | 8.3E-04 | NA | **2.2E-03** | Immunological | NA |
| | | | AROCLOR-1260 | 6.3E-08 | 3.7E-08 | 2.8E-09 | **1.0E-07** | 4.2E-03 | 2.5E-03 | NA | **6.7E-03** | Immunological | NA |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Soil | Soil | HC | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 3.0E-08 | 1.7E-08 | 8.6E-10 | **4.8E-08** | NA | NA | NA | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 3.3E-07 | 1.8E-07 | 1.7E-11 | **5.2E-07** | 3.0E-03 | 1.6E-03 | 3.7E-05 | **4.7E-03** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 3.8E-08 | 2.1E-08 | 1.9E-12 | **6.0E-08** | NA | NA | NA | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 3.5E-09 | 1.9E-09 | 1.7E-13 | **5.5E-09** | NA | NA | NA | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 5.6E-08 | 3.1E-08 | 2.8E-12 | **8.7E-08** | NA | NA | NA | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 1.5E-08 | 8.1E-09 | 7.3E-13 | **2.3E-08** | NA | NA | NA | **NA** | NA | NA |
| | | | NAPHTHALENE | NA | NA | 7.8E-09 | **7.8E-09** | 6.8E-06 | 3.8E-06 | 2.0E-04 | **2.2E-04** | Systemic | Respiratory |
| Sediment | Sediment | HC | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 1.3E-03 | NA | | **1.3E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 9.2E-04 | NA | | **9.2E-04** | Hematological | NA |
| | | | ARSENIC | 1.9E-05 | 1.2E-05 | | **3.1E-05** | 1.2E-01 | 7.0E-02 | | **1.9E-01** | Skin | Respiratory |
| | | | BARIUM | NA | NA | | **NA** | 7.6E-04 | NA | | **7.6E-04** | Renal | Reproductive |
| | | | CADMIUM | NA | NA | | **NA** | 6.8E-04 | 3.3E-04 | | **1.0E-03** | Renal | Renal |
| | | | CHROMIUM | 6.2E-07 | NA | | **6.2E-07** | 1.1E-03 | NA | | **1.1E-03** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 2.5E-03 | NA | | **2.5E-03** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 6.4E-04 | NA | | **6.4E-04** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 1.2E-02 | NA | | **1.2E-02** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 3.7E-03 | NA | | **3.7E-03** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 5.1E-04 | NA | | **5.1E-04** | Nervous system | Nervous system |
| | | | NICKEL | NA | NA | | **NA** | 2.5E-04 | NA | | **2.5E-04** | Systemic | Respiratory |
| | | | THALLIUM | NA | NA | | **NA** | 2.5E-02 | NA | | **2.5E-02** | Skin | NA |
| | | | VANADIUM | NA | NA | | **NA** | 7.3E-04 | NA | | **7.3E-04** | Systemic | Respiratory |
| | | | ZINC | NA | NA | | **NA** | 2.4E-04 | NA | | **2.4E-04** | Hematological | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 1.5E-08 | 2.6E-08 | | **4.1E-08** | 1.0E-03 | 1.7E-03 | | **2.7E-03** | Immunological | NA |
| | | | AROCLOR-1260 | 6.5E-09 | 1.1E-08 | | **1.7E-08** | 4.4E-04 | 7.4E-04 | | **1.2E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 4.0E-09 | 6.2E-09 | | **1.0E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 3.9E-08 | 6.1E-08 | | **1.0E-07** | 3.5E-04 | 5.5E-04 | | **9.0E-04** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 5.3E-09 | 8.3E-09 | | **1.4E-08** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 1.1E-08 | 1.7E-08 | | **2.7E-08** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 2.2E-09 | 3.4E-09 | | **5.6E-09** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | HC | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | | NA | | **NA** | | 5.6E-05 | | **5.6E-05** | Nervous system | Nervous system |
| | | | ANTIMONY | | NA | | **NA** | | 5.1E-04 | | **5.1E-04** | Hematological | NA |
| | | | ARSENIC | | 5.5E-07 | | **5.5E-07** | | 3.3E-03 | | **3.3E-03** | Skin | Respiratory |
| | | | BARIUM | | NA | | **NA** | | 2.9E-04 | | **2.9E-04** | Renal | Reproductive |
| | | | CADMIUM | | NA | | **NA** | | 9.1E-04 | | **9.1E-04** | Renal | Renal |
| | | | CHROMIUM | | 7.9E-06 | | **7.9E-06** | | 1.4E-02 | | **1.4E-02** | None Observed | Respiratory |
| | | | COBALT | | NA | | **NA** | | 3.3E-05 | | **3.3E-05** | Endocrine | Endocrine |
| | | | COPPER | | NA | | **NA** | | 6.4E-06 | | **6.4E-06** | Gastrointestinal | NA |
| | | | CYANIDE | | NA | | **NA** | | 1.3E-04 | | **1.3E-04** | Reproductive | Endocrine |
| | | | IRON | | NA | | **NA** | | 1.8E-04 | | **1.8E-04** | Gastrointestinal | NA |
| | | | LEAD | | NA | | **NA** | | NA | | **NA** | NA | NA |
| | | | MANGANESE | | NA | | **NA** | | 1.5E-03 | | **1.5E-03** | Nervous system | Nervous system |
| | | | MERCURY | | NA | | **NA** | | 8.7E-05 | | **8.7E-05** | Immunological | Nervous system |
| | | | THALLIUM | | NA | | **NA** | | 4.9E-03 | | **4.9E-03** | Skin | NA |
| | | | VANADIUM | | NA | | **NA** | | 3.6E-04 | | **3.6E-04** | Systemic | Respiratory |
| | | | ZINC | | NA | | **NA** | | 8.7E-06 | | **8.7E-06** | Hematological | NA |
| **Exposure Point Total - HC** | | | | 1.1E-04 | 3.9E-05 | 9.0E-08 | **1E-04** | 8.3E-01 | 2.1E-01 | 1.1E-01 | **1E+00** | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| | | | | | | | | **Total Organ HI (HC)** | | | | | |
| | | | | | | | | Developmental | | | 6E-03 | | |
| | | | | | | | | Endocrine | | | 1E-01 | | |
| | | | | | | | | Gastrointestinal | | | 3E-02 | | |
| | | | | | | | | Hematological | | | 9E-03 | | |
| | | | | | | | | Immunological | | | 1E-02 | | |
| | | | | | | | | Nervous System | | | 2E-02 | | |
| | | | | | | | | None Observed | | | 2E-02 | | |
| | | | | | | | | Renal | | | 1E-02 | | |
| | | | | | | | | Reproductive | | | 5E-02 | | |
| | | | | | | | | Respiratory | | | 2E-03 | | |
| | | | | | | | | Skin | | | 9E-01 | | |
| | | | | | | | | Systemic | | | 5E-03 | | |
| Soil | Soil | KWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | NA | **NA** | 2.4E-03 | NA | 3.9E-05 | **2.4E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | NA | **NA** | 4.6E-03 | NA | NA | **4.6E-03** | Hematological | NA |
| | | | ARSENIC | 1.4E-06 | 3.1E-07 | 5.7E-10 | **1.8E-06** | 8.6E-03 | 1.8E-03 | 2.4E-05 | **1.0E-02** | Skin | Respiratory |
| | | | CHROMIUM | 8.8E-08 | NA | 1.2E-09 | **8.9E-08** | 1.6E-04 | NA | 3.9E-07 | **1.6E-04** | None Observed | Respiratory |
| | | | COBALT | NA | NA | 1.2E-10 | **1.2E-10** | 1.5E-03 | NA | 6.1E-06 | **1.5E-03** | Endocrine | Endocrine |
| | | | CYANIDE | NA | NA | NA | **NA** | 3.2E-04 | NA | 8.4E-04 | **1.2E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | NA | **NA** | 5.8E-03 | NA | NA | **5.8E-03** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | NA | **NA** | NA | NA | NA | **NA** | NA | NA |
| | | | THALLIUM | NA | NA | NA | **NA** | 2.3E-02 | NA | NA | **2.3E-02** | Skin | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 2.4E-08 | 1.3E-08 | 1.2E-12 | **3.8E-08** | 2.2E-04 | 1.2E-04 | 2.7E-06 | **3.4E-04** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 4.9E-09 | 2.7E-09 | 2.4E-13 | **7.6E-09** | NA | NA | NA | **NA** | NA | NA |
| Sediment | Sediment | KWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 2.4E-03 | NA | | **2.4E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 7.7E-04 | NA | | **7.7E-04** | Hematological | NA |
| | | | ARSENIC | 4.4E-06 | 2.7E-06 | | **7.1E-06** | 2.7E-02 | 1.6E-02 | | **4.3E-02** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | | **NA** | 1.2E-03 | 5.6E-04 | | **1.7E-03** | Renal | Renal |
| | | | CHROMIUM | 2.4E-07 | NA | | **2.4E-07** | 4.3E-04 | NA | | **4.3E-04** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 4.3E-03 | NA | | **4.3E-03** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 7.9E-04 | NA | | **7.9E-04** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 1.0E-03 | NA | | **1.0E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 5.7E-03 | NA | | **5.7E-03** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 8.9E-04 | NA | | **8.9E-04** | Nervous system | Nervous system |
| | | | NICKEL | NA | NA | | **NA** | 2.8E-04 | NA | | **2.8E-04** | Systemic | Respiratory |
| | | | THALLIUM | NA | NA | | **NA** | 7.0E-03 | NA | | **7.0E-03** | Skin | NA |
| | | | VANADIUM | NA | NA | | **NA** | 7.9E-04 | NA | | **7.9E-04** | Systemic | Respiratory |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 1.8E-08 | 3.1E-08 | | **4.9E-08** | 1.2E-03 | 2.1E-03 | | **3.3E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 6.4E-09 | 1.0E-08 | | **1.6E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 6.0E-08 | 9.4E-08 | | **1.5E-07** | 5.4E-04 | 8.4E-04 | | **1.4E-03** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 7.8E-09 | 1.2E-08 | | **2.0E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 6.8E-10 | 1.1E-09 | | **1.7E-09** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 9.1E-09 | 1.4E-08 | | **2.3E-08** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 2.3E-09 | 3.6E-09 | | **6.0E-09** | NA | NA | | **NA** | NA | NA |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Surface Water | Surface Water | KWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | | NA | | **NA** | | 1.2E-05 | | **1.2E-05** | Nervous system | Nervous system |
| | | | ANTIMONY | | NA | | **NA** | | 5.6E-04 | | **5.6E-04** | Hematological | NA |
| | | | ARSENIC | | 8.5E-08 | | **8.5E-08** | | 5.1E-04 | | **5.1E-04** | Skin | Respiratory |
| | | | CHROMIUM | | 3.6E-07 | | **3.6E-07** | | 6.5E-04 | | **6.5E-04** | None Observed | Respiratory |
| | | | COBALT | | NA | | **NA** | | 1.9E-05 | | **1.9E-05** | Endocrine | Endocrine |
| | | | CYANIDE | | NA | | **NA** | | 2.7E-05 | | **2.7E-05** | Reproductive | Endocrine |
| | | | IRON | | NA | | **NA** | | 4.7E-05 | | **4.7E-05** | Gastrointestinal | NA |
| | | | LEAD | | NA | | **NA** | | NA | | **NA** | NA | NA |
| | | | MANGANESE | | NA | | **NA** | | 7.5E-04 | | **7.5E-04** | Nervous system | Nervous system |
| | | | THALLIUM | | NA | | **NA** | | 5.3E-03 | | **5.3E-03** | Skin | NA |
| **Exposure Point Total - KWL** | | | | 6.3E-06 | 3.6E-06 | 1.9E-09 | **1E-05** | 1.0E-01 | 2.9E-02 | 9.1E-04 | **1E-01** | | |
| | | | | | | | | **Total Organ HI (KWL)** | | | | | |
| | | | | | | | | Developmental | | | 2E-03 | | |
| | | | | | | | | Endocrine | | | 7E-03 | | |
| | | | | | | | | Gastrointestinal | | | 1E-02 | | |
| | | | | | | | | Hematological | | | 6E-03 | | |
| | | | | | | | | Immunological | | | 3E-03 | | |
| | | | | | | | | Nervous System | | | 6E-03 | | |
| | | | | | | | | None Observed | | | 1E-03 | | |
| | | | | | | | | Renal | | | 2E-03 | | |
| | | | | | | | | Reproductive | | | 1E-03 | | |
| | | | | | | | | Respiratory | | | 2E-05 | | |
| | | | | | | | | Skin | | | 9E-02 | | |
| | | | | | | | | Systemic | | | 1E-03 | | |

**Table 9.2**
**Chemical Cancer Risks and Non-cancer Hazards**
**Reasonable Maximum Exposure**
**Recreator - Adolescent**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Sediment | Sediment | SL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 8.1E-04 | NA | | **8.1E-04** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 1.5E-03 | NA | | **1.5E-03** | Hematological | NA |
| | | | ARSENIC | 3.4E-07 | 1.6E-07 | | **5.0E-07** | 5.4E-03 | 2.5E-03 | | **7.8E-03** | Skin | Respiratory |
| | | | CHROMIUM | 4.7E-08 | NA | | **4.7E-08** | 7.3E-05 | NA | | **7.3E-05** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 5.6E-03 | NA | | **5.6E-03** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 6.9E-04 | NA | | **6.9E-04** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 1.2E-03 | NA | | **1.2E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 3.1E-03 | NA | | **3.1E-03** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 1.2E-03 | NA | | **1.2E-03** | Nervous system | Nervous system |
| | | | THALLIUM | NA | NA | | **NA** | 2.3E-02 | NA | | **2.3E-02** | Skin | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 5.1E-09 | 6.6E-09 | | **1.2E-08** | 8.8E-04 | 1.1E-03 | | **2.0E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 2.3E-07 | 2.8E-07 | | **5.1E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 1.7E-06 | 2.1E-06 | | **3.8E-06** | 1.3E-02 | 1.6E-02 | | **2.9E-02** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 3.4E-07 | 4.2E-07 | | **7.6E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 7.3E-09 | 8.8E-09 | | **1.6E-08** | NA | NA | | **NA** | NA | NA |
| | | | CHRYSENE | 3.5E-09 | 4.2E-09 | | **7.6E-09** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 1.7E-07 | 2.1E-07 | | **3.9E-07** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 4.7E-08 | 5.7E-08 | | **1.0E-07** | NA | NA | | **NA** | NA | NA |
| | | | **TICs** | | | | | | | | | | |
| | | | BENZO[J]FLUORANTHENE | 5.6E-07 | 6.8E-07 | | **1.2E-06** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | SL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | | 2.1E-08 | | **2.1E-08** | | 3.3E-04 | | **3.3E-04** | Skin | Respiratory |
| | | | CHROMIUM | | 2.8E-07 | | **2.8E-07** | | 4.3E-04 | | **4.3E-04** | None Observed | Respiratory |
| | | | COBALT | | NA | | **NA** | | 3.6E-05 | | **3.6E-05** | Endocrine | Endocrine |
| | | | CYANIDE | | NA | | **NA** | | 9.3E-05 | | **9.3E-05** | Reproductive | Endocrine |
| | | | IRON | | NA | | **NA** | | 2.0E-04 | | **2.0E-04** | Gastrointestinal | NA |
| | | | MANGANESE | | NA | | **NA** | | 1.2E-02 | | **1.2E-02** | Nervous system | Nervous system |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | | 7.9E-08 | | **7.9E-08** | | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | | 3.5E-06 | | **3.5E-06** | | 2.8E-02 | | **2.8E-02** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | | 1.4E-07 | | **1.4E-07** | | NA | | **NA** | NA | NA |
| | | | BIS(2-ETHYLHEXYL) PHTHALATE | | 4.6E-07 | | **4.6E-07** | | 1.1E-02 | | **1.1E-02** | Hepatic | NA |
| | | | DIBENZO(A,H)ANTHRACENE | | 1.2E-06 | | **1.2E-06** | | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | | 1.9E-07 | | **1.9E-07** | | NA | | **NA** | NA | NA |
| **Exposure Point Total - SL** | | | | 3.5E-06 | 9.7E-06 | 0.0E+00 | **1E-05** | 5.7E-02 | 7.2E-02 | 0.0E+00 | **1E-01** | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| | | | | | | | | **Total Organ HI (SL)** | | | | | |
| | | | | | | | | Developmental | | | 6E-02 | | |
| | | | | | | | | Endocrine | | | 6E-03 | | |
| | | | | | | | | Gastrointestinal | | | 4E-03 | | |
| | | | | | | | | Hematological | | | 2E-03 | | |
| | | | | | | | | Hepatic | | | 1E-02 | | |
| | | | | | | | | Immunological | | | 2E-03 | | |
| | | | | | | | | Nervous System | | | 1E-02 | | |
| | | | | | | | | None Observed | | | 5E-04 | | |
| | | | | | | | | Reproductive | | | 1E-03 | | |
| | | | | | | | | Skin | | | 3E-02 | | |
| Soil | Soil | BWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | NA | **NA** | 3.5E-03 | NA | 3.2E-05 | **3.6E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | NA | **NA** | 3.3E-03 | NA | NA | **3.3E-03** | Hematological | NA |
| | | | ARSENIC | 1.4E-05 | 2.2E-06 | 3.0E-09 | **1.6E-05** | 2.1E-01 | 3.5E-02 | 3.2E-04 | **2.5E-01** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | 2.5E-11 | **2.5E-11** | 2.1E-03 | 2.8E-04 | 9.7E-06 | **2.4E-03** | Renal | Renal |
| | | | CHROMIUM | 4.0E-07 | NA | 3.1E-09 | **4.0E-07** | 6.2E-04 | NA | 8.5E-07 | **6.2E-04** | None Observed | Respiratory |
| | | | COBALT | NA | NA | 5.9E-11 | **5.9E-11** | 3.4E-03 | NA | 7.7E-06 | **3.4E-03** | Endocrine | Endocrine |
| | | | CYANIDE | NA | NA | NA | **NA** | 9.2E-04 | NA | 1.4E-03 | **2.3E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | NA | **NA** | 8.3E-03 | NA | NA | **8.3E-03** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | NA | **NA** | NA | NA | NA | **NA** | NA | NA |
| | | | THALLIUM | NA | NA | NA | **NA** | 7.9E-02 | NA | NA | **7.9E-02** | Skin | NA |
| | | | VANADIUM | NA | NA | NA | **NA** | 2.3E-03 | NA | 5.3E-06 | **2.3E-03** | Systemic | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 5.4E-08 | 2.3E-08 | 1.5E-12 | **7.6E-08** | 4.2E-04 | 1.8E-04 | 2.9E-06 | **6.0E-04** | Developmental | Developmental |
| Sediment | Sediment | BWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 4.0E-03 | NA | | **4.0E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 4.9E-03 | NA | | **4.9E-03** | Hematological | NA |
| | | | ARSENIC | 9.9E-06 | 4.6E-06 | | **1.5E-05** | 1.5E-01 | 7.2E-02 | | **2.3E-01** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | | **NA** | 3.6E-03 | 1.3E-03 | | **5.0E-03** | Renal | Renal |
| | | | CHROMIUM | 4.5E-07 | NA | | **4.5E-07** | 7.0E-04 | NA | | **7.0E-04** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 1.5E-02 | NA | | **1.5E-02** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 1.2E-03 | NA | | **1.2E-03** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 6.9E-03 | NA | | **6.9E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 1.6E-02 | NA | | **1.6E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 1.2E-03 | NA | | **1.2E-03** | Nervous system | Nervous system |
| | | | VANADIUM | NA | NA | | **NA** | 3.0E-03 | NA | | **3.0E-03** | Systemic | Respiratory |
| | | | ZINC | NA | NA | | **NA** | 1.0E-03 | NA | | **1.0E-03** | Hematological | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 6.2E-09 | 8.1E-09 | | **1.4E-08** | 1.1E-03 | 1.4E-03 | | **2.5E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 1.6E-08 | 1.9E-08 | | **3.5E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 1.6E-07 | 1.9E-07 | | **3.5E-07** | 1.2E-03 | 1.5E-03 | | **2.7E-03** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 2.4E-08 | 2.8E-08 | | **5.2E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 2.3E-09 | 2.8E-09 | | **5.0E-09** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 3.3E-08 | 4.0E-08 | | **7.3E-08** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 8.7E-09 | 1.0E-08 | | **1.9E-08** | NA | NA | | **NA** | NA | NA |
| | | | NAPHTHALENE | NA | NA | | **NA** | 3.9E-05 | 4.7E-05 | | **8.5E-05** | Systemic | Respiratory |
| | | | **VOCs** | | | | | | | | | | |
| | | | TRICHLOROETHYLENE (TCE) | 1.7E-10 | NA | | **1.7E-10** | 3.6E-05 | NA | | **3.6E-05** | Developmental | Developmental |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Surface Water | Surface Water | BWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | | NA | | **NA** | | 1.6E-05 | | **1.6E-05** | Nervous system | Nervous system |
| | | | ANTIMONY | | NA | | **NA** | | 2.4E-04 | | **2.4E-04** | Hematological | NA |
| | | | ARSENIC | | 8.3E-08 | | **8.3E-08** | | 1.3E-03 | | **1.3E-03** | Skin | Respiratory |
| | | | CADMIUM | | NA | | **NA** | | 3.1E-04 | | **3.1E-04** | Renal | Renal |
| | | | CHROMIUM | | 4.8E-07 | | **4.8E-07** | | 7.5E-04 | | **7.5E-04** | None Observed | Respiratory |
| | | | COBALT | | NA | | **NA** | | 1.7E-05 | | **1.7E-05** | Endocrine | Endocrine |
| | | | CYANIDE | | NA | | **NA** | | 4.2E-05 | | **4.2E-05** | Reproductive | Endocrine |
| | | | IRON | | NA | | **NA** | | 1.2E-04 | | **1.2E-04** | Gastrointestinal | NA |
| | | | LEAD | | NA | | **NA** | | NA | | **NA** | NA | NA |
| | | | MANGANESE | | NA | | **NA** | | 9.2E-04 | | **9.2E-04** | Nervous system | Nervous system |
| | | | THALLIUM | | NA | | **NA** | | 1.6E-03 | | **1.6E-03** | Skin | NA |
| | | | VANADIUM | | NA | | **NA** | | 2.4E-04 | | **2.4E-04** | Systemic | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | | 6.0E-07 | | **6.0E-07** | | 4.7E-03 | | **4.7E-03** | Developmental | Developmental |
| **Exposure Point Total - BWL** | | | | 2.5E-05 | 8.3E-06 | 6.1E-09 | **3E-05** | 5.3E-01 | 1.2E-01 | 1.7E-03 | **7E-01** | | |
| | | | | | | | | **Total Organ HI (BWL)** | | | | | |
| | | | | | | | | Developmental | | | 8E-03 | | |
| | | | | | | | | Endocrine | | | 2E-02 | | |
| | | | | | | | | Gastrointestinal | | | 3E-02 | | |
| | | | | | | | | Hematological | | | 9E-03 | | |
| | | | | | | | | Immunological | | | 3E-03 | | |
| | | | | | | | | Nervous System | | | 1E-02 | | |
| | | | | | | | | None Observed | | | 2E-03 | | |
| | | | | | | | | Renal | | | 8E-03 | | |
| | | | | | | | | Reproductive | | | 8E-03 | | |
| | | | | | | | | Respiratory | | | 3E-04 | | |
| | | | | | | | | Skin | | | 6E-01 | | |
| | | | | | | | | Systemic | | | 6E-03 | | |
| Soil | Soil | HC | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | NA | **NA** | 8.5E-03 | NA | 7.8E-05 | **8.6E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | NA | **NA** | 1.2E-02 | NA | NA | **1.2E-02** | Hematological | NA |
| | | | ARSENIC | 5.9E-05 | 9.6E-06 | 1.3E-08 | **6.9E-05** | 9.2E-01 | 1.5E-01 | 1.4E-03 | **1.1E+00** | Skin | Respiratory |
| | | | BARIUM | NA | NA | NA | **NA** | 9.0E-03 | NA | 1.6E-04 | **9.2E-03** | Renal | Reproductive |
| | | | CADMIUM | NA | NA | 3.2E-11 | **3.2E-11** | 2.7E-03 | 3.5E-04 | 1.2E-05 | **3.1E-03** | Renal | Renal |
| | | | CHROMIUM | 6.4E-06 | NA | 4.9E-08 | **6.4E-06** | 9.9E-03 | NA | 1.4E-05 | **1.0E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | 3.4E-10 | **3.4E-10** | 1.9E-02 | NA | 4.4E-05 | **2.0E-02** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | NA | **NA** | 3.3E-03 | NA | NA | **3.3E-03** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | NA | **NA** | 7.6E-02 | NA | 1.1E-01 | **1.9E-01** | Reproductive | Endocrine |
| | | | IRON | NA | NA | NA | **NA** | 3.7E-02 | NA | NA | **3.7E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | NA | **NA** | NA | NA | NA | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | NA | **NA** | 1.3E-02 | NA | 2.9E-04 | **1.3E-02** | Nervous system | Nervous system |
| | | | MERCURY | NA | NA | NA | **NA** | 2.4E-03 | NA | 1.1E-07 | **2.4E-03** | Immunological | Nervous system |
| | | | NICKEL | NA | NA | 2.2E-11 | **2.2E-11** | 6.3E-04 | NA | 6.4E-06 | **6.4E-04** | Systemic | Respiratory |
| | | | THALLIUM | NA | NA | NA | **NA** | 6.1E-02 | NA | NA | **6.1E-02** | Skin | NA |
| | | | VANADIUM | NA | NA | NA | **NA** | 5.7E-03 | NA | 1.3E-05 | **5.7E-03** | Systemic | Respiratory |
| | | | ZINC | NA | NA | NA | **NA** | 1.6E-03 | NA | NA | **1.6E-03** | Hematological | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 1.5E-08 | 6.6E-09 | 5.7E-10 | **2.2E-08** | 2.5E-03 | 1.2E-03 | NA | **3.7E-03** | Immunological | NA |
| | | | AROCLOR-1260 | 4.4E-08 | 2.0E-08 | 1.1E-09 | **6.5E-08** | 7.7E-03 | 3.5E-03 | NA | **1.1E-02** | Immunological | NA |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Soil | Soil | HC | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 6.3E-08 | 2.7E-08 | 1.0E-09 | **9.1E-08** | NA | NA | NA | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 7.0E-07 | 2.9E-07 | 1.9E-11 | **9.9E-07** | 5.4E-03 | 2.3E-03 | 3.7E-05 | **7.8E-03** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 8.0E-08 | 3.4E-08 | 2.2E-12 | **1.1E-07** | NA | NA | NA | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 7.3E-09 | 3.1E-09 | 2.0E-13 | **1.0E-08** | NA | NA | NA | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 1.2E-07 | 5.0E-08 | 3.2E-12 | **1.7E-07** | NA | NA | NA | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 3.1E-08 | 1.3E-08 | 8.4E-13 | **4.4E-08** | NA | NA | NA | **NA** | NA | NA |
| | | | NAPHTHALENE | NA | NA | 3.0E-09 | **3.0E-09** | 1.2E-05 | 5.2E-06 | 2.0E-04 | **2.2E-04** | Systemic | Respiratory |
| | | | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 2.3E-03 | NA | | **2.3E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 1.7E-03 | NA | | **1.7E-03** | Hematological | NA |
| | | | ARSENIC | 1.3E-05 | 6.3E-06 | | **2.0E-05** | 2.1E-01 | 9.7E-02 | | **3.1E-01** | Skin | Respiratory |
| | | | BARIUM | NA | NA | | **NA** | 1.4E-03 | NA | | **1.4E-03** | Renal | Reproductive |
| | | | CADMIUM | NA | NA | | **NA** | 1.2E-03 | 4.6E-04 | | **1.7E-03** | Renal | Renal |
| | | | CHROMIUM | 1.3E-06 | NA | | **1.3E-06** | 2.0E-03 | NA | | **2.0E-03** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 4.5E-03 | NA | | **4.5E-03** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 1.2E-03 | NA | | **1.2E-03** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 2.2E-02 | NA | | **2.2E-02** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 6.7E-03 | NA | | **6.7E-03** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 9.2E-04 | NA | | **9.2E-04** | Nervous system | Nervous system |
| | | | NICKEL | NA | NA | | **NA** | 4.5E-04 | NA | | **4.5E-04** | Systemic | Respiratory |
| | | | THALLIUM | NA | NA | | **NA** | 4.5E-02 | NA | | **4.5E-02** | Skin | NA |
| | | | VANADIUM | NA | NA | | **NA** | 1.3E-03 | NA | | **1.3E-03** | Systemic | Respiratory |
| | | | ZINC | NA | NA | | **NA** | 4.4E-04 | NA | | **4.4E-04** | Hematological | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 1.0E-08 | 1.4E-08 | | **2.4E-08** | 1.8E-03 | 2.4E-03 | | **4.2E-03** | Immunological | NA |
| | | | AROCLOR-1260 | 4.5E-09 | 5.8E-09 | | **1.0E-08** | 7.9E-04 | 1.0E-03 | | **1.8E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 8.3E-09 | 1.0E-08 | | **1.8E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 8.1E-08 | 9.8E-08 | | **1.8E-07** | 6.3E-04 | 7.6E-04 | | **1.4E-03** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 1.1E-08 | 1.3E-08 | | **2.4E-08** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 2.2E-08 | 2.7E-08 | | **4.9E-08** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 4.5E-09 | 5.5E-09 | | **1.0E-08** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | HC | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | | NA | | **NA** | | 7.8E-05 | | **7.8E-05** | Nervous system | Nervous system |
| | | | ANTIMONY | | NA | | **NA** | | 7.0E-04 | | **7.0E-04** | Hematological | NA |
| | | | ARSENIC | | 2.9E-07 | | **2.9E-07** | | 4.5E-03 | | **4.5E-03** | Skin | Respiratory |
| | | | BARIUM | | NA | | **NA** | | 4.1E-04 | | **4.1E-04** | Renal | Reproductive |
| | | | CADMIUM | | NA | | **NA** | | 1.3E-03 | | **1.3E-03** | Renal | Renal |
| | | | CHROMIUM | | 1.3E-05 | | **1.3E-05** | | 2.0E-02 | | **2.0E-02** | None Observed | Respiratory |
| | | | COBALT | | NA | | **NA** | | 4.6E-05 | | **4.6E-05** | Endocrine | Endocrine |
| | | | COPPER | | NA | | **NA** | | 8.9E-06 | | **8.9E-06** | Gastrointestinal | NA |
| | | | CYANIDE | | NA | | **NA** | | 1.8E-04 | | **1.8E-04** | Reproductive | Endocrine |
| | | | IRON | | NA | | **NA** | | 2.5E-04 | | **2.5E-04** | Gastrointestinal | NA |
| | | | LEAD | | NA | | **NA** | | NA | | **NA** | NA | NA |
| | | | MANGANESE | | NA | | **NA** | | 2.1E-03 | | **2.1E-03** | Nervous system | Nervous system |
| | | | MERCURY | | NA | | **NA** | | 1.2E-04 | | **1.2E-04** | Immunological | Nervous system |
| | | | THALLIUM | | NA | | **NA** | | 6.8E-03 | | **6.8E-03** | Skin | NA |
| | | | VANADIUM | | NA | | **NA** | | 5.0E-04 | | **5.0E-04** | Systemic | Respiratory |
| | | | ZINC | | NA | | **NA** | | 1.2E-05 | | **1.2E-05** | Hematological | NA |
| **Exposure Point Total - HC** | | | | 8.2E-05 | 2.9E-05 | 6.8E-08 | **1E-04** | 1.5E+00 | 3.0E-01 | 1.1E-01 | **2E+00** | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| | | | | | | | | **Total Organ HI (HC)** | | | | | |
| | | | | | | | | Developmental | | | 9E-03 | | |
| | | | | | | | | Endocrine | | | 1E-01 | | |
| | | | | | | | | Gastrointestinal | | | 5E-02 | | |
| | | | | | | | | Hematological | | | 2E-02 | | |
| | | | | | | | | Immunological | | | 2E-02 | | |
| | | | | | | | | Nervous System | | | 3E-02 | | |
| | | | | | | | | None Observed | | | 3E-02 | | |
| | | | | | | | | Renal | | | 2E-02 | | |
| | | | | | | | | Reproductive | | | 1E-01 | | |
| | | | | | | | | Respiratory | | | 2E-03 | | |
| | | | | | | | | Skin | | | 1E+00 | | |
| | | | | | | | | Systemic | | | 9E-03 | | |
| Soil | Soil | KWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | NA | **NA** | 4.3E-03 | NA | 3.9E-05 | **4.3E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | NA | **NA** | 8.4E-03 | NA | NA | **8.4E-03** | Hematological | NA |
| | | | ARSENIC | 1.0E-06 | 1.6E-07 | 2.2E-10 | **1.2E-06** | 1.6E-02 | 2.5E-03 | 2.4E-05 | **1.8E-02** | Skin | Respiratory |
| | | | CHROMIUM | 1.8E-07 | NA | 1.4E-09 | **1.8E-07** | 2.8E-04 | NA | 3.9E-07 | **2.9E-04** | None Observed | Respiratory |
| | | | COBALT | NA | NA | 4.7E-11 | **4.7E-11** | 2.7E-03 | NA | 6.1E-06 | **2.7E-03** | Endocrine | Endocrine |
| | | | CYANIDE | NA | NA | NA | **NA** | 5.7E-04 | NA | 8.4E-04 | **1.4E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | NA | **NA** | 1.0E-02 | NA | NA | **1.0E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | NA | **NA** | NA | NA | NA | **NA** | NA | NA |
| | | | THALLIUM | NA | NA | NA | **NA** | 4.1E-02 | NA | NA | **4.1E-02** | Skin | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 5.0E-08 | 2.1E-08 | 1.4E-12 | **7.2E-08** | 3.9E-04 | 1.7E-04 | 2.7E-06 | **5.6E-04** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 1.0E-08 | 4.3E-09 | 2.8E-13 | **1.5E-08** | NA | NA | NA | **NA** | NA | NA |
| Sediment | Sediment | KWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 4.4E-03 | NA | | **4.4E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 1.4E-03 | NA | | **1.4E-03** | Hematological | NA |
| | | | ARSENIC | 3.1E-06 | 1.4E-06 | | **4.5E-06** | 4.8E-02 | 2.2E-02 | | **7.0E-02** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | | **NA** | 2.1E-03 | 7.8E-04 | | **2.9E-03** | Renal | Renal |
| | | | CHROMIUM | 5.0E-07 | NA | | **5.0E-07** | 7.8E-04 | NA | | **7.8E-04** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 7.8E-03 | NA | | **7.8E-03** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 1.4E-03 | NA | | **1.4E-03** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 1.9E-03 | NA | | **1.9E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 1.0E-02 | NA | | **1.0E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 1.6E-03 | NA | | **1.6E-03** | Nervous system | Nervous system |
| | | | NICKEL | NA | NA | | **NA** | 5.0E-04 | NA | | **5.0E-04** | Systemic | Respiratory |
| | | | THALLIUM | NA | NA | | **NA** | 1.3E-02 | NA | | **1.3E-02** | Skin | NA |
| | | | VANADIUM | NA | NA | | **NA** | 1.4E-03 | NA | | **1.4E-03** | Systemic | Respiratory |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 1.3E-08 | 1.7E-08 | | **2.9E-08** | 2.2E-03 | 2.9E-03 | | **5.1E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 1.3E-08 | 1.6E-08 | | **2.9E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 1.2E-07 | 1.5E-07 | | **2.8E-07** | 9.7E-04 | 1.2E-03 | | **2.1E-03** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 1.6E-08 | 1.9E-08 | | **3.6E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 1.4E-09 | 1.7E-09 | | **3.1E-09** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 1.9E-08 | 2.3E-08 | | **4.2E-08** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 4.8E-09 | 5.8E-09 | | **1.1E-08** | NA | NA | | **NA** | NA | NA |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Surface Water | Surface Water | KWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | | NA | | **NA** | | 1.7E-05 | | **1.7E-05** | Nervous system | Nervous system |
| | | | ANTIMONY | | NA | | **NA** | | 7.8E-04 | | **7.8E-04** | Hematological | NA |
| | | | ARSENIC | | 4.5E-08 | | **4.5E-08** | | 7.0E-04 | | **7.0E-04** | Skin | Respiratory |
| | | | CHROMIUM | | 5.8E-07 | | **5.8E-07** | | 9.0E-04 | | **9.0E-04** | None Observed | Respiratory |
| | | | COBALT | | NA | | **NA** | | 2.7E-05 | | **2.7E-05** | Endocrine | Endocrine |
| | | | CYANIDE | | NA | | **NA** | | 3.8E-05 | | **3.8E-05** | Reproductive | Endocrine |
| | | | IRON | | NA | | **NA** | | 6.5E-05 | | **6.5E-05** | Gastrointestinal | NA |
| | | | LEAD | | NA | | **NA** | | NA | | **NA** | NA | NA |
| | | | MANGANESE | | NA | | **NA** | | 1.0E-03 | | **1.0E-03** | Nervous system | Nervous system |
| | | | THALLIUM | | NA | | **NA** | | 7.3E-03 | | **7.3E-03** | Skin | NA |
| **Exposure Point Total - KWL** | | | | 5.0E-06 | 2.5E-06 | 1.7E-09 | **7E-06** | 1.8E-01 | 4.1E-02 | 9.1E-04 | **2E-01** | | |
| | | | | | | | | **Total Organ HI (KWL)** | | | | | |
| | | | | | | | | Developmental | | | 3E-03 | | |
| | | | | | | | | Endocrine | | | 1E-02 | | |
| | | | | | | | | Gastrointestinal | | | 2E-02 | | |
| | | | | | | | | Hematological | | | 1E-02 | | |
| | | | | | | | | Immunological | | | 5E-03 | | |
| | | | | | | | | Nervous System | | | 1E-02 | | |
| | | | | | | | | None Observed | | | 2E-03 | | |
| | | | | | | | | Renal | | | 3E-03 | | |
| | | | | | | | | Reproductive | | | 2E-03 | | |
| | | | | | | | | Respiratory | | | 2E-05 | | |
| | | | | | | | | Skin | | | 1E-01 | | |
| | | | | | | | | Systemic | | | 2E-03 | | |

**Table 9.3**
**Chemical Cancer Risks and Non-cancer Hazards**
**Reasonable Maximum Exposure**
**Recreator - Child**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Sediment | Sediment | SL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 4.8E-03 | NA | | **4.8E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 9.1E-03 | NA | | **9.1E-03** | Hematological | NA |
| | | | ARSENIC | 1.2E-06 | 1.4E-07 | | **1.4E-06** | 3.2E-02 | 3.8E-03 | | **3.5E-02** | Skin | Respiratory |
| | | | CHROMIUM | 4.0E-07 | NA | | **4.0E-07** | 4.3E-04 | NA | | **4.3E-04** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 3.3E-02 | NA | | **3.3E-02** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 4.1E-03 | NA | | **4.1E-03** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 7.2E-03 | NA | | **7.2E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 1.8E-02 | NA | | **1.8E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 7.3E-03 | NA | | **7.3E-03** | Nervous system | Nervous system |
| | | | THALLIUM | NA | NA | | **NA** | 1.4E-01 | NA | | **1.4E-01** | Skin | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 1.8E-08 | 6.0E-09 | | **2.4E-08** | 5.2E-03 | 1.7E-03 | | **7.0E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 2.0E-06 | 5.4E-07 | | **2.5E-06** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 1.5E-05 | 4.0E-06 | | **1.9E-05** | 7.8E-02 | 2.4E-02 | | **1.0E-01** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 3.0E-06 | 8.1E-07 | | **3.8E-06** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 6.3E-08 | 1.7E-08 | | **8.0E-08** | NA | NA | | **NA** | NA | NA |
| | | | CHRYSENE | 3.0E-08 | 8.2E-09 | | **3.8E-08** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 1.5E-06 | 4.1E-07 | | **1.9E-06** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 4.1E-07 | 1.1E-07 | | **5.2E-07** | NA | NA | | **NA** | NA | NA |
| | | | **TICs** | | | | | | | | | | |
| | | | BENZO[J]FLUORANTHENE | 2.0E-06 | 6.1E-07 | | **2.6E-06** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | SL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | | 1.9E-08 | | **1.9E-08** | | 5.0E-04 | | **5.0E-04** | Skin | Respiratory |
| | | | CHROMIUM | | 5.4E-07 | | **5.4E-07** | | 6.5E-04 | | **6.5E-04** | None Observed | Respiratory |
| | | | COBALT | | NA | | **NA** | | 5.4E-05 | | **5.4E-05** | Endocrine | Endocrine |
| | | | CYANIDE | | NA | | **NA** | | 1.4E-04 | | **1.4E-04** | Reproductive | Endocrine |
| | | | IRON | | NA | | **NA** | | 3.1E-04 | | **3.1E-04** | Gastrointestinal | NA |
| | | | MANGANESE | | NA | | **NA** | | 1.9E-02 | | **1.9E-02** | Nervous system | Nervous system |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | | 1.5E-07 | | **1.5E-07** | | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | | 6.9E-06 | | **6.9E-06** | | 4.2E-02 | | **4.2E-02** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | | 2.7E-07 | | **2.7E-07** | | NA | | **NA** | NA | NA |
| | | | BIS(2-ETHYLHEXYL) PHTHALATE | | 4.2E-07 | | **4.2E-07** | | 1.7E-02 | | **1.7E-02** | Hepatic | NA |
| | | | DIBENZO(A,H)ANTHRACENE | | 2.2E-06 | | **2.2E-06** | | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | | 3.7E-07 | | **3.7E-07** | | NA | | **NA** | NA | NA |
| **Exposure Point Total - SL** | | | | 2.5E-05 | 1.8E-05 | 0.0E+00 | **4E-05** | 3.4E-01 | 1.1E-01 | 0.0E+00 | **4E-01** | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| | | | | | | | | **Total Organ HI (SL)** | | | | | |
| | | | | | | | | Developmental | | | 1E-01 | | |
| | | | | | | | | Endocrine | | | 3E-02 | | |
| | | | | | | | | Gastrointestinal | | | 2E-02 | | |
| | | | | | | | | Hematological | | | 9E-03 | | |
| | | | | | | | | Hepatic | | | 2E-02 | | |
| | | | | | | | | Immunological | | | 7E-03 | | |
| | | | | | | | | Nervous System | | | 3E-02 | | |
| | | | | | | | | None Observed | | | 1E-03 | | |
| | | | | | | | | Reproductive | | | 7E-03 | | |
| | | | | | | | | Skin | | | 2E-01 | | |
| Soil | Soil | BWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | NA | **NA** | 2.1E-02 | NA | 3.2E-05 | **2.1E-02** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | NA | **NA** | 1.9E-02 | NA | NA | **1.9E-02** | Hematological | NA |
| | | | ARSENIC | 4.9E-05 | 5.8E-06 | 1.8E-09 | **5.4E-05** | 1.3E+00 | 1.5E-01 | 3.2E-04 | **1.4E+00** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | 1.5E-11 | **1.5E-11** | 1.3E-02 | 1.2E-03 | 9.7E-06 | **1.4E-02** | Renal | Renal |
| | | | CHROMIUM | 3.4E-06 | NA | 3.3E-09 | **3.5E-06** | 3.7E-03 | NA | 8.5E-07 | **3.7E-03** | None Observed | Respiratory |
| | | | COBALT | NA | NA | 3.6E-11 | **3.6E-11** | 2.0E-02 | NA | 7.7E-06 | **2.0E-02** | Endocrine | Endocrine |
| | | | CYANIDE | NA | NA | NA | **NA** | 5.5E-03 | NA | 1.4E-03 | **6.8E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | NA | **NA** | 4.9E-02 | NA | NA | **4.9E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | NA | **NA** | NA | NA | NA | **NA** | NA | NA |
| | | | THALLIUM | NA | NA | NA | **NA** | 4.7E-01 | NA | NA | **4.7E-01** | Skin | NA |
| | | | VANADIUM | NA | NA | NA | **NA** | 1.4E-02 | NA | 5.3E-06 | **1.4E-02** | Systemic | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 4.6E-07 | 1.3E-07 | 1.6E-12 | **5.9E-07** | 2.5E-03 | 7.6E-04 | 2.9E-06 | **3.2E-03** | Developmental | Developmental |
| Sediment | Sediment | BWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 2.4E-02 | NA | | **2.4E-02** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 2.9E-02 | NA | | **2.9E-02** | Hematological | NA |
| | | | ARSENIC | 3.5E-05 | 4.2E-06 | | **3.9E-05** | 9.1E-01 | 1.1E-01 | | **1.0E+00** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | | **NA** | 2.1E-02 | 2.0E-03 | | **2.3E-02** | Renal | Renal |
| | | | CHROMIUM | 3.9E-06 | NA | | **3.9E-06** | 4.2E-03 | NA | | **4.2E-03** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 9.0E-02 | NA | | **9.0E-02** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 7.1E-03 | NA | | **7.1E-03** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 4.1E-02 | NA | | **4.1E-02** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 9.7E-02 | NA | | **9.7E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 7.3E-03 | NA | | **7.3E-03** | Nervous system | Nervous system |
| | | | VANADIUM | NA | NA | | **NA** | 1.8E-02 | NA | | **1.8E-02** | Systemic | Respiratory |
| | | | ZINC | NA | NA | | **NA** | 6.0E-03 | NA | | **6.0E-03** | Hematological | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 2.2E-08 | 7.3E-09 | | **2.9E-08** | 6.4E-03 | 2.1E-03 | | **8.6E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 1.4E-07 | 3.7E-08 | | **1.7E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 1.4E-06 | 3.8E-07 | | **1.8E-06** | 7.3E-03 | 2.3E-03 | | **9.6E-03** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 2.0E-07 | 5.6E-08 | | **2.6E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 2.0E-08 | 5.4E-09 | | **2.5E-08** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 2.9E-07 | 7.8E-08 | | **3.6E-07** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 7.5E-08 | 2.0E-08 | | **9.5E-08** | NA | NA | | **NA** | NA | NA |
| | | | NAPHTHALENE | NA | NA | | **NA** | 2.3E-04 | 7.1E-05 | | **3.0E-04** | Systemic | Respiratory |
| | | | **VOCs** | | | | | | | | | | |
| | | | TRICHLOROETHYLENE (TCE) | 9.6E-10 | NA | | **9.6E-10** | 2.1E-04 | NA | | **2.1E-04** | Developmental | Developmental |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Surface Water | Surface Water | BWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | | NA | | **NA** | | 2.5E-05 | | **2.5E-05** | Nervous system | Nervous system |
| | | | ANTIMONY | | NA | | **NA** | | 3.7E-04 | | **3.7E-04** | Hematological | NA |
| | | | ARSENIC | | 7.5E-08 | | **7.5E-08** | | 1.9E-03 | | **1.9E-03** | Skin | Respiratory |
| | | | CADMIUM | | NA | | **NA** | | 4.7E-04 | | **4.7E-04** | Renal | Renal |
| | | | CHROMIUM | | 9.5E-07 | | **9.5E-07** | | 1.1E-03 | | **1.1E-03** | None Observed | Respiratory |
| | | | COBALT | | NA | | **NA** | | 2.6E-05 | | **2.6E-05** | Endocrine | Endocrine |
| | | | CYANIDE | | NA | | **NA** | | 6.4E-05 | | **6.4E-05** | Reproductive | Endocrine |
| | | | IRON | | NA | | **NA** | | 1.8E-04 | | **1.8E-04** | Gastrointestinal | NA |
| | | | LEAD | | NA | | **NA** | | NA | | **NA** | NA | NA |
| | | | MANGANESE | | NA | | **NA** | | 1.4E-03 | | **1.4E-03** | Nervous system | Nervous system |
| | | | THALLIUM | | NA | | **NA** | | 2.4E-03 | | **2.4E-03** | Skin | NA |
| | | | VANADIUM | | NA | | **NA** | | 3.6E-04 | | **3.6E-04** | Systemic | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | | 1.2E-06 | | **1.2E-06** | | 7.1E-03 | | **7.1E-03** | Developmental | Developmental |
| **Exposure Point Total - BWL** | | | | 9.4E-05 | 1.3E-05 | 5.1E-09 | **1E-04** | 3.1E+00 | 2.8E-01 | 1.7E-03 | **3E+00** | | |
| | | | | | | | | **Total Organ HI (BWL)** | | | | | |
| | | | | | | | | Developmental | | | 2E-02 | | |
| | | | | | | | | Endocrine | | | 1E-01 | | |
| | | | | | | | | Gastrointestinal | | | 2E-01 | | |
| | | | | | | | | Hematological | | | 6E-02 | | |
| | | | | | | | | Immunological | | | 9E-03 | | |
| | | | | | | | | Nervous System | | | 5E-02 | | |
| | | | | | | | | None Observed | | | 9E-03 | | |
| | | | | | | | | Renal | | | 4E-02 | | |
| | | | | | | | | Reproductive | | | 5E-02 | | |
| | | | | | | | | Respiratory | | | 3E-04 | | |
| | | | | | | | | Skin | | | 3E+00 | | |
| | | | | | | | | Systemic | | | 3E-02 | | |
| Soil | Soil | HC | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | NA | **NA** | 5.0E-02 | NA | 7.8E-05 | **5.0E-02** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | NA | **NA** | 7.3E-02 | NA | NA | **7.3E-02** | Hematological | NA |
| | | | ARSENIC | 2.1E-04 | 2.5E-05 | 7.8E-09 | **2.3E-04** | 5.4E+00 | 6.5E-01 | 1.4E-03 | **6.1E+00** | Skin | Respiratory |
| | | | BARIUM | NA | NA | NA | **NA** | 5.3E-02 | NA | 1.6E-04 | **5.3E-02** | Renal | Reproductive |
| | | | CADMIUM | NA | NA | 1.9E-11 | **1.9E-11** | 1.6E-02 | 1.5E-03 | 1.2E-05 | **1.7E-02** | Renal | Renal |
| | | | CHROMIUM | 5.5E-05 | NA | 5.2E-08 | **5.5E-05** | 5.9E-02 | NA | 1.4E-05 | **5.9E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | 2.1E-10 | **2.1E-10** | 1.2E-01 | NA | 4.4E-05 | **1.2E-01** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | NA | **NA** | 2.0E-02 | NA | NA | **2.0E-02** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | NA | **NA** | 4.5E-01 | NA | 1.1E-01 | **5.6E-01** | Reproductive | Endocrine |
| | | | IRON | NA | NA | NA | **NA** | 2.2E-01 | NA | NA | **2.2E-01** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | NA | **NA** | NA | NA | NA | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | NA | **NA** | 7.7E-02 | NA | 2.9E-04 | **7.8E-02** | Nervous system | Nervous system |
| | | | MERCURY | NA | NA | NA | **NA** | 1.4E-02 | NA | 1.1E-07 | **1.4E-02** | Immunological | Nervous system |
| | | | NICKEL | NA | NA | 1.3E-11 | **1.3E-11** | 3.7E-03 | NA | 6.4E-06 | **3.8E-03** | Systemic | Respiratory |
| | | | THALLIUM | NA | NA | NA | **NA** | 3.6E-01 | NA | NA | **3.6E-01** | Skin | NA |
| | | | VANADIUM | NA | NA | NA | **NA** | 3.3E-02 | NA | 1.3E-05 | **3.3E-02** | Systemic | Respiratory |
| | | | ZINC | NA | NA | NA | **NA** | 9.7E-03 | NA | NA | **9.7E-03** | Hematological | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 5.2E-08 | 1.7E-08 | 3.4E-10 | **6.9E-08** | 1.5E-02 | 5.0E-03 | NA | **2.0E-02** | Immunological | NA |
| | | | AROCLOR-1260 | 1.5E-07 | 5.1E-08 | 6.6E-10 | **2.1E-07** | 4.5E-02 | 1.5E-02 | NA | **6.0E-02** | Immunological | NA |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Soil | Soil | HC | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 5.5E-07 | 1.5E-07 | 1.1E-09 | **7.0E-07** | NA | NA | NA | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 6.0E-06 | 1.6E-06 | 2.0E-11 | **7.6E-06** | 3.2E-02 | 9.9E-03 | 3.7E-05 | **4.2E-02** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 6.9E-07 | 1.9E-07 | 2.3E-12 | **8.8E-07** | NA | NA | NA | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 6.3E-08 | 1.7E-08 | 2.1E-13 | **8.1E-08** | NA | NA | NA | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 1.0E-06 | 2.8E-07 | 3.4E-12 | **1.3E-06** | NA | NA | NA | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 2.6E-07 | 7.2E-08 | 9.0E-13 | **3.4E-07** | NA | NA | NA | **NA** | NA | NA |
| | | | NAPHTHALENE | NA | NA | 1.8E-09 | **1.8E-09** | 7.3E-05 | 2.2E-05 | 2.0E-04 | **3.0E-04** | Systemic | Respiratory |
| Sediment | Sediment | HC | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 1.3E-02 | NA | | **1.3E-02** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 9.9E-03 | NA | | **9.9E-03** | Hematological | NA |
| | | | ARSENIC | 4.8E-05 | 5.7E-06 | | **5.3E-05** | 1.2E+00 | 1.5E-01 | | **1.4E+00** | Skin | Respiratory |
| | | | BARIUM | NA | NA | | **NA** | 8.1E-03 | NA | | **8.1E-03** | Renal | Reproductive |
| | | | CADMIUM | NA | NA | | **NA** | 7.3E-03 | 6.9E-04 | | **8.0E-03** | Renal | Renal |
| | | | CHROMIUM | 1.1E-05 | NA | | **1.1E-05** | 1.2E-02 | NA | | **1.2E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 2.7E-02 | NA | | **2.7E-02** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 6.8E-03 | NA | | **6.8E-03** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 1.3E-01 | NA | | **1.3E-01** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 3.9E-02 | NA | | **3.9E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 5.5E-03 | NA | | **5.5E-03** | Nervous system | Nervous system |
| | | | NICKEL | NA | NA | | **NA** | 2.7E-03 | NA | | **2.7E-03** | Systemic | Respiratory |
| | | | THALLIUM | NA | NA | | **NA** | 2.6E-01 | NA | | **2.6E-01** | Skin | NA |
| | | | VANADIUM | NA | NA | | **NA** | 7.8E-03 | NA | | **7.8E-03** | Systemic | Respiratory |
| | | | ZINC | NA | NA | | **NA** | 2.6E-03 | NA | | **2.6E-03** | Hematological | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 3.7E-08 | 1.2E-08 | | **5.0E-08** | 1.1E-02 | 3.6E-03 | | **1.4E-02** | Immunological | NA |
| | | | AROCLOR-1260 | 1.6E-08 | 5.3E-09 | | **2.1E-08** | 4.6E-03 | 1.5E-03 | | **6.2E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 7.1E-08 | 2.0E-08 | | **9.1E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 7.0E-07 | 1.9E-07 | | **8.9E-07** | 3.7E-03 | 1.2E-03 | | **4.9E-03** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 9.5E-08 | 2.6E-08 | | **1.2E-07** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 1.9E-07 | 5.2E-08 | | **2.4E-07** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 3.9E-08 | 1.1E-08 | | **5.0E-08** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | HC | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | | NA | | **NA** | | 1.2E-04 | | **1.2E-04** | Nervous system | Nervous system |
| | | | ANTIMONY | | NA | | **NA** | | 1.1E-03 | | **1.1E-03** | Hematological | NA |
| | | | ARSENIC | | 2.6E-07 | | **2.6E-07** | | 6.9E-03 | | **6.9E-03** | Skin | Respiratory |
| | | | BARIUM | | NA | | **NA** | | 6.2E-04 | | **6.2E-04** | Renal | Reproductive |
| | | | CADMIUM | | NA | | **NA** | | 1.9E-03 | | **1.9E-03** | Renal | Renal |
| | | | CHROMIUM | | 2.5E-05 | | **2.5E-05** | | 3.0E-02 | | **3.0E-02** | None Observed | Respiratory |
| | | | COBALT | | NA | | **NA** | | 6.9E-05 | | **6.9E-05** | Endocrine | Endocrine |
| | | | COPPER | | NA | | **NA** | | 1.3E-05 | | **1.3E-05** | Gastrointestinal | NA |
| | | | CYANIDE | | NA | | **NA** | | 2.7E-04 | | **2.7E-04** | Reproductive | Endocrine |
| | | | IRON | | NA | | **NA** | | 3.7E-04 | | **3.7E-04** | Gastrointestinal | NA |
| | | | LEAD | | NA | | **NA** | | NA | | **NA** | NA | NA |
| | | | MANGANESE | | NA | | **NA** | | 3.2E-03 | | **3.2E-03** | Nervous system | Nervous system |
| | | | MERCURY | | NA | | **NA** | | 1.8E-04 | | **1.8E-04** | Immunological | Nervous system |
| | | | THALLIUM | | NA | | **NA** | | 1.0E-02 | | **1.0E-02** | Skin | NA |
| | | | VANADIUM | | NA | | **NA** | | 7.5E-04 | | **7.5E-04** | Systemic | Respiratory |
| | | | ZINC | | NA | | **NA** | | 1.8E-05 | | **1.8E-05** | Hematological | NA |
| **Exposure Point Total - HC** | | | | 3.3E-04 | 5.8E-05 | 6.4E-08 | **4E-04** | 8.9E+00 | 8.9E-01 | 1.1E-01 | **1E+01** | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| | | | | | | | | **Total Organ HI (HC)** | | | | | |
| | | | | | | | | Developmental | | | 5E-02 | | |
| | | | | | | | | Endocrine | | | 3E-01 | | |
| | | | | | | | | Gastrointestinal | | | 3E-01 | | |
| | | | | | | | | Hematological | | | 1E-01 | | |
| | | | | | | | | Immunological | | | 1E-01 | | |
| | | | | | | | | Nervous System | | | 2E-01 | | |
| | | | | | | | | None Observed | | | 1E-01 | | |
| | | | | | | | | Renal | | | 9E-02 | | |
| | | | | | | | | Reproductive | | | 6E-01 | | |
| | | | | | | | | Respiratory | | | 2E-03 | | |
| | | | | | | | | Skin | | | 8E+00 | | |
| | | | | | | | | Systemic | | | 5E-02 | | |
| Soil | Soil | KWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | NA | **NA** | 2.5E-02 | NA | 3.9E-05 | **2.5E-02** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | NA | **NA** | 5.0E-02 | NA | NA | **5.0E-02** | Hematological | NA |
| | | | ARSENIC | 3.6E-06 | 4.2E-07 | 1.3E-10 | **4.0E-06** | 9.2E-02 | 1.1E-02 | 2.4E-05 | **1.0E-01** | Skin | Respiratory |
| | | | CHROMIUM | 1.6E-06 | NA | 1.5E-09 | **1.6E-06** | 1.7E-03 | NA | 3.9E-07 | **1.7E-03** | None Observed | Respiratory |
| | | | COBALT | NA | NA | 2.8E-11 | **2.8E-11** | 1.6E-02 | NA | 6.1E-06 | **1.6E-02** | Endocrine | Endocrine |
| | | | CYANIDE | NA | NA | NA | **NA** | 3.4E-03 | NA | 8.4E-04 | **4.2E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | NA | **NA** | 6.1E-02 | NA | NA | **6.1E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | NA | **NA** | NA | NA | NA | **NA** | NA | NA |
| | | | THALLIUM | NA | NA | NA | **NA** | 2.4E-01 | NA | NA | **2.4E-01** | Skin | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 4.3E-07 | 1.2E-07 | 1.5E-12 | **5.5E-07** | 2.3E-03 | 7.2E-04 | 2.7E-06 | **3.0E-03** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 8.8E-08 | 2.4E-08 | 3.0E-13 | **1.1E-07** | NA | NA | NA | **NA** | NA | NA |
| Sediment | Sediment | KWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 2.6E-02 | NA | | **2.6E-02** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 8.2E-03 | NA | | **8.2E-03** | Hematological | NA |
| | | | ARSENIC | 1.1E-05 | 1.3E-06 | | **1.2E-05** | 2.8E-01 | 3.4E-02 | | **3.2E-01** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | | **NA** | 1.2E-02 | 1.2E-03 | | **1.4E-02** | Renal | Renal |
| | | | CHROMIUM | 4.3E-06 | NA | | **4.3E-06** | 4.6E-03 | NA | | **4.6E-03** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 4.6E-02 | NA | | **4.6E-02** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 8.4E-03 | NA | | **8.4E-03** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 1.1E-02 | NA | | **1.1E-02** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 6.1E-02 | NA | | **6.1E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 9.5E-03 | NA | | **9.5E-03** | Nervous system | Nervous system |
| | | | NICKEL | NA | NA | | **NA** | 2.9E-03 | NA | | **2.9E-03** | Systemic | Respiratory |
| | | | THALLIUM | NA | NA | | **NA** | 7.5E-02 | NA | | **7.5E-02** | Skin | NA |
| | | | VANADIUM | NA | NA | | **NA** | 8.4E-03 | NA | | **8.4E-03** | Systemic | Respiratory |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 4.5E-08 | 1.5E-08 | | **6.0E-08** | 1.3E-02 | 4.4E-03 | | **1.8E-02** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 1.1E-07 | 3.1E-08 | | **1.5E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 1.1E-06 | 2.9E-07 | | **1.4E-06** | 5.7E-03 | 1.8E-03 | | **7.5E-03** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 1.4E-07 | 3.8E-08 | | **1.8E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 1.2E-08 | 3.3E-09 | | **1.5E-08** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 1.6E-07 | 4.5E-08 | | **2.1E-07** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 4.2E-08 | 1.1E-08 | | **5.3E-08** | NA | NA | | **NA** | NA | NA |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Surface Water | Surface Water | KWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | | NA | | **NA** | | 2.6E-05 | | **2.6E-05** | Nervous system | Nervous system |
| | | | ANTIMONY | | NA | | **NA** | | 1.2E-03 | | **1.2E-03** | Hematological | NA |
| | | | ARSENIC | | 4.1E-08 | | **4.1E-08** | | 1.1E-03 | | **1.1E-03** | Skin | Respiratory |
| | | | CHROMIUM | | 1.1E-06 | | **1.1E-06** | | 1.4E-03 | | **1.4E-03** | None Observed | Respiratory |
| | | | COBALT | | NA | | **NA** | | 4.1E-05 | | **4.1E-05** | Endocrine | Endocrine |
| | | | CYANIDE | | NA | | **NA** | | 5.7E-05 | | **5.7E-05** | Reproductive | Endocrine |
| | | | IRON | | NA | | **NA** | | 9.8E-05 | | **9.8E-05** | Gastrointestinal | NA |
| | | | LEAD | | NA | | **NA** | | NA | | **NA** | NA | NA |
| | | | MANGANESE | | NA | | **NA** | | 1.6E-03 | | **1.6E-03** | Nervous system | Nervous system |
| | | | THALLIUM | | NA | | **NA** | | 1.1E-02 | | **1.1E-02** | Skin | NA |
| **Exposure Point Total - KWL** | | | | 2.2E-05 | 3.5E-06 | 1.7E-09 | **3E-05** | 1.1E+00 | 6.9E-02 | 9.1E-04 | **1E+00** | | |
| | | | | | | | | **Total Organ HI (KWL)** | | | | | |
| | | | | | | | | Developmental | | | 1E-02 | | |
| | | | | | | | | Endocrine | | | 6E-02 | | |
| | | | | | | | | Gastrointestinal | | | 1E-01 | | |
| | | | | | | | | Hematological | | | 6E-02 | | |
| | | | | | | | | Immunological | | | 2E-02 | | |
| | | | | | | | | Nervous System | | | 6E-02 | | |
| | | | | | | | | None Observed | | | 8E-03 | | |
| | | | | | | | | Renal | | | 1E-02 | | |
| | | | | | | | | Reproductive | | | 1E-02 | | |
| | | | | | | | | Respiratory | | | 2E-05 | | |
| | | | | | | | | Skin | | | 7E-01 | | |
| | | | | | | | | Systemic | | | 1E-02 | | |

**Table 9.4**
**Chemical Cancer Risks and Non-cancer Hazards**
**Reasonable Maximum Exposure**
**Swimmer - Adult**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Sediment | Sediment | SL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 1.1E-03 | NA | | **1.1E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 2.0E-03 | NA | | **2.0E-03** | Hematological | NA |
| | | | ARSENIC | 1.2E-06 | 7.1E-07 | | **1.9E-06** | 7.1E-03 | 4.3E-03 | | **1.1E-02** | Skin | Respiratory |
| | | | CHROMIUM | 5.3E-08 | NA | | **5.3E-08** | 9.6E-05 | NA | | **9.6E-05** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 7.4E-03 | NA | | **7.4E-03** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 9.1E-04 | NA | | **9.1E-04** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 1.6E-03 | NA | | **1.6E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 4.1E-03 | NA | | **4.1E-03** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 1.6E-03 | NA | | **1.6E-03** | Nervous system | Nervous system |
| | | | THALLIUM | NA | NA | | **NA** | 3.1E-02 | NA | | **3.1E-02** | Skin | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 1.7E-08 | 2.9E-08 | | **4.7E-08** | 1.2E-03 | 2.0E-03 | | **3.1E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 2.6E-07 | 4.1E-07 | | **6.8E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 2.0E-06 | 3.1E-06 | | **5.0E-06** | 1.8E-02 | 2.8E-02 | | **4.5E-02** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 3.9E-07 | 6.2E-07 | | **1.0E-06** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 8.4E-09 | 1.3E-08 | | **2.1E-08** | NA | NA | | **NA** | NA | NA |
| | | | CHRYSENE | 4.0E-09 | 6.2E-09 | | **1.0E-08** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 2.0E-07 | 3.1E-07 | | **5.1E-07** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 5.4E-08 | 8.5E-08 | | **1.4E-07** | NA | NA | | **NA** | NA | NA |
| | | | **TICs** | | | | | | | | | | |
| | | | BENZO[J]FLUORANTHENE | 1.9E-06 | 3.0E-06 | | **4.9E-06** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | SL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 2.8E-06 | 7.0E-07 | | **3.5E-06** | 1.7E-02 | 4.2E-03 | | **2.1E-02** | Skin | Respiratory |
| | | | CHROMIUM | 3.0E-07 | 3.1E-06 | | **3.4E-06** | 5.4E-04 | 5.5E-03 | | **6.0E-03** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 4.5E-03 | 4.6E-04 | | **5.0E-03** | Endocrine | Endocrine |
| | | | CYANIDE | NA | NA | | **NA** | 4.7E-03 | 1.2E-03 | | **5.9E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 1.0E-02 | 2.6E-03 | | **1.3E-02** | Gastrointestinal | NA |
| | | | MANGANESE | NA | NA | | **NA** | 2.5E-02 | 1.6E-01 | | **1.8E-01** | Nervous system | Nervous system |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 1.6E-09 | 5.8E-07 | | **5.8E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 4.7E-08 | 2.6E-05 | | **2.6E-05** | 4.3E-04 | 2.3E-01 | | **2.3E-01** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 3.2E-09 | 1.0E-06 | | **1.0E-06** | NA | NA | | **NA** | NA | NA |
| | | | BIS(2-ETHYLHEXYL) PHTHALATE | 5.9E-09 | 1.0E-05 | | **1.0E-05** | 5.7E-05 | 9.7E-02 | | **9.7E-02** | Hepatic | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 1.6E-08 | 8.4E-06 | | **8.5E-06** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 2.1E-09 | 1.4E-06 | | **1.4E-06** | NA | NA | | **NA** | NA | NA |
| **Exposure Point Total - SL** | | | | 9.2E-06 | 6.0E-05 | 0.0E+00 | **7E-05** | 1.4E-01 | 5.4E-01 | 0.0E+00 | **7E-01** | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| | | | | | | | | **Total Organ HI (SL)** | | | | | |
| | | | | | | | | Developmental | | | 3E-01 | | |
| | | | | | | | | Endocrine | | | 1E-02 | | |
| | | | | | | | | Gastrointestinal | | | 2E-02 | | |
| | | | | | | | | Hematological | | | 2E-03 | | |
| | | | | | | | | Hepatic | | | 1E-01 | | |
| | | | | | | | | Immunological | | | 3E-03 | | |
| | | | | | | | | Nervous System | | | 2E-01 | | |
| | | | | | | | | None Observed | | | 6E-03 | | |
| | | | | | | | | Reproductive | | | 8E-03 | | |
| | | | | | | | | Skin | | | 6E-02 | | |
| Sediment | Sediment | BWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 5.3E-03 | NA | | **5.3E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 6.5E-03 | NA | | **6.5E-03** | Hematological | NA |
| | | | ARSENIC | 3.4E-05 | 2.1E-05 | | **5.5E-05** | 2.0E-01 | 1.2E-01 | | **3.3E-01** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | | **NA** | 4.8E-03 | 2.3E-03 | | **7.1E-03** | Renal | Renal |
| | | | CHROMIUM | 5.2E-07 | NA | | **5.2E-07** | 9.3E-04 | NA | | **9.3E-04** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 2.0E-02 | NA | | **2.0E-02** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 1.6E-03 | NA | | **1.6E-03** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 9.1E-03 | NA | | **9.1E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 2.2E-02 | NA | | **2.2E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 1.6E-03 | NA | | **1.6E-03** | Nervous system | Nervous system |
| | | | VANADIUM | NA | NA | | **NA** | 4.0E-03 | NA | | **4.0E-03** | Systemic | Respiratory |
| | | | ZINC | NA | NA | | **NA** | 1.3E-03 | NA | | **1.3E-03** | Hematological | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 2.1E-08 | 3.6E-08 | | **5.8E-08** | 1.4E-03 | 2.4E-03 | | **3.9E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 1.8E-08 | 2.8E-08 | | **4.6E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 1.8E-07 | 2.9E-07 | | **4.7E-07** | 1.6E-03 | 2.6E-03 | | **4.2E-03** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 2.7E-08 | 4.2E-08 | | **6.9E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 2.6E-09 | 4.1E-09 | | **6.7E-09** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 3.8E-08 | 6.0E-08 | | **9.8E-08** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 1.0E-08 | 1.6E-08 | | **2.6E-08** | NA | NA | | **NA** | NA | NA |
| | | | NAPHTHALENE | NA | NA | | **NA** | 5.1E-05 | 8.0E-05 | | **1.3E-04** | Systemic | Respiratory |
| | | | **VOCs** | | | | | | | | | | |
| | | | TRICHLOROETHYLENE (TCE) | 4.1E-10 | NA | | **4.1E-10** | 4.8E-05 | NA | | **4.8E-05** | Developmental | Developmental |
| Surface Water | Surface Water | BWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 8.2E-04 | 2.1E-04 | | **1.0E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 1.8E-03 | 3.1E-03 | | **4.9E-03** | Hematological | NA |
| | | | ARSENIC | 1.1E-05 | 2.7E-06 | | **1.4E-05** | 6.5E-02 | 1.6E-02 | | **8.2E-02** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | | **NA** | 7.9E-04 | 4.0E-03 | | **4.8E-03** | Renal | Renal |
| | | | CHROMIUM | 5.3E-07 | 5.4E-06 | | **5.9E-06** | 9.5E-04 | 9.6E-03 | | **1.1E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 2.1E-03 | 2.2E-04 | | **2.4E-03** | Endocrine | Endocrine |
| | | | CYANIDE | NA | NA | | **NA** | 2.1E-03 | 5.4E-04 | | **2.7E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 5.9E-03 | 1.5E-03 | | **7.4E-03** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 1.9E-03 | 1.2E-02 | | **1.4E-02** | Nervous system | Nervous system |
| | | | THALLIUM | NA | NA | | **NA** | 7.9E-02 | 2.0E-02 | | **9.9E-02** | Skin | NA |
| | | | VANADIUM | NA | NA | | **NA** | 3.1E-04 | 3.0E-03 | | **3.4E-03** | Systemic | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 8.1E-09 | 4.4E-06 | | **4.4E-06** | 7.2E-05 | 4.0E-02 | | **4.0E-02** | Developmental | Developmental |
| **Exposure Point Total - BWL** | | | | 4.6E-05 | 3.4E-05 | 0.0E+00 | **8E-05** | 4.5E-01 | 2.4E-01 | 0.0E+00 | **7E-01** | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| | | | | | | | | **Total Organ HI (BWL)** | | | | | |
| | | | | | | | | Developmental | | | 4E-02 | | |
| | | | | | | | | Endocrine | | | 2E-02 | | |
| | | | | | | | | Gastrointestinal | | | 3E-02 | | |
| | | | | | | | | Hematological | | | 1E-02 | | |
| | | | | | | | | Immunological | | | 4E-03 | | |
| | | | | | | | | Nervous System | | | 2E-02 | | |
| | | | | | | | | None Observed | | | 1E-02 | | |
| | | | | | | | | Renal | | | 1E-02 | | |
| | | | | | | | | Reproductive | | | 1E-02 | | |
| | | | | | | | | Skin | | | 5E-01 | | |
| | | | | | | | | Systemic | | | 8E-03 | | |
| Sediment | Sediment | KWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 5.8E-03 | NA | | **5.8E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 1.8E-03 | NA | | **1.8E-03** | Hematological | NA |
| | | | ARSENIC | 1.1E-05 | 6.4E-06 | | **1.7E-05** | 6.3E-02 | 3.8E-02 | | **1.0E-01** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | | **NA** | 2.8E-03 | 1.3E-03 | | **4.1E-03** | Renal | Renal |
| | | | CHROMIUM | 5.8E-07 | NA | | **5.8E-07** | 1.0E-03 | NA | | **1.0E-03** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 1.0E-02 | NA | | **1.0E-02** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 1.9E-03 | NA | | **1.9E-03** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 2.4E-03 | NA | | **2.4E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 1.4E-02 | NA | | **1.4E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 2.1E-03 | NA | | **2.1E-03** | Nervous system | Nervous system |
| | | | NICKEL | NA | NA | | **NA** | 6.6E-04 | NA | | **6.6E-04** | Systemic | Respiratory |
| | | | THALLIUM | NA | NA | | **NA** | 1.7E-02 | NA | | **1.7E-02** | Skin | NA |
| | | | VANADIUM | NA | NA | | **NA** | 1.9E-03 | NA | | **1.9E-03** | Systemic | Respiratory |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 4.4E-08 | 7.4E-08 | | **1.2E-07** | 2.9E-03 | 5.0E-03 | | **7.9E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 1.5E-08 | 2.4E-08 | | **3.9E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 1.4E-07 | 2.2E-07 | | **3.7E-07** | 1.3E-03 | 2.0E-03 | | **3.3E-03** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 1.8E-08 | 2.9E-08 | | **4.8E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 1.6E-09 | 2.5E-09 | | **4.2E-09** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 2.2E-08 | 3.4E-08 | | **5.6E-08** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 5.5E-09 | 8.7E-09 | | **1.4E-08** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | KWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 8.8E-04 | 2.2E-04 | | **1.1E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 5.9E-03 | 9.9E-03 | | **1.6E-02** | Hematological | NA |
| | | | ARSENIC | 5.9E-06 | 1.5E-06 | | **7.4E-06** | 3.6E-02 | 9.0E-03 | | **4.4E-02** | Skin | Respiratory |
| | | | CHROMIUM | 6.3E-07 | 6.4E-06 | | **7.0E-06** | 1.1E-03 | 1.1E-02 | | **1.3E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 3.4E-03 | 3.4E-04 | | **3.7E-03** | Endocrine | Endocrine |
| | | | CYANIDE | NA | NA | | **NA** | 1.9E-03 | 4.8E-04 | | **2.4E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 3.3E-03 | 8.3E-04 | | **4.1E-03** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 2.1E-03 | 1.3E-02 | | **1.5E-02** | Nervous system | Nervous system |
| | | | THALLIUM | NA | NA | | **NA** | 3.7E-01 | 9.3E-02 | | **4.6E-01** | Skin | NA |
| **Exposure Point Total - KWL** | | | | 1.8E-05 | 1.5E-05 | 0.0E+00 | **3E-05** | 5.5E-01 | 1.9E-01 | 0.0E+00 | **7E-01** | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| | | | | | | | | **Total Organ HI (KWL)** | | | | | |
| | | | | | | | | Developmental | | | 3E-03 | | |
| | | | | | | | | Endocrine | | | 1E-02 | | |
| | | | | | | | | Gastrointestinal | | | 2E-02 | | |
| | | | | | | | | Hematological | | | 2E-02 | | |
| | | | | | | | | Immunological | | | 8E-03 | | |
| | | | | | | | | Nervous System | | | 2E-02 | | |
| | | | | | | | | None Observed | | | 1E-02 | | |
| | | | | | | | | Renal | | | 4E-03 | | |
| | | | | | | | | Reproductive | | | 5E-03 | | |
| | | | | | | | | Skin | | | 6E-01 | | |
| | | | | | | | | Systemic | | | 3E-03 | | |

**Table 9.5**
**Chemical Cancer Risks and Non-cancer Hazards**
**Reasonable Maximum Exposure**
**Swimmer - Adolescent**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Sediment | Sediment | SL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 1.9E-03 | NA | | **1.9E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 3.7E-03 | NA | | **3.7E-03** | Hematological | NA |
| | | | ARSENIC | 8.2E-07 | 3.8E-07 | | **1.2E-06** | 1.3E-02 | 5.9E-03 | | **1.9E-02** | Skin | Respiratory |
| | | | CHROMIUM | 1.1E-07 | NA | | **1.1E-07** | 1.7E-04 | NA | | **1.7E-04** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 1.3E-02 | NA | | **1.3E-02** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 1.6E-03 | NA | | **1.6E-03** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 2.9E-03 | NA | | **2.9E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 7.4E-03 | NA | | **7.4E-03** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 3.0E-03 | NA | | **3.0E-03** | Nervous system | Nervous system |
| | | | THALLIUM | NA | NA | | **NA** | 5.6E-02 | NA | | **5.6E-02** | Skin | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 1.2E-08 | 1.6E-08 | | **2.8E-08** | 2.1E-03 | 2.7E-03 | | **4.9E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 5.5E-07 | 6.6E-07 | | **1.2E-06** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 4.1E-06 | 4.9E-06 | | **9.0E-06** | 3.2E-02 | 3.8E-02 | | **7.0E-02** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 8.2E-07 | 9.9E-07 | | **1.8E-06** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 1.7E-08 | 2.1E-08 | | **3.8E-08** | NA | NA | | **NA** | NA | NA |
| | | | CHRYSENE | 8.3E-09 | 1.0E-08 | | **1.8E-08** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 4.2E-07 | 5.0E-07 | | **9.2E-07** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 1.1E-07 | 1.4E-07 | | **2.5E-07** | NA | NA | | **NA** | NA | NA |
| | | | **TICs** | | | | | | | | | | |
| | | | BENZO[J]FLUORANTHENE | 1.3E-06 | 1.6E-06 | | **2.9E-06** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | SL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 1.6E-06 | 2.9E-07 | | **1.8E-06** | 2.4E-02 | 4.5E-03 | | **2.9E-02** | Skin | Respiratory |
| | | | CHROMIUM | 5.1E-07 | 3.8E-06 | | **4.3E-06** | 7.9E-04 | 5.9E-03 | | **6.7E-03** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 6.6E-03 | 4.9E-04 | | **7.1E-03** | Endocrine | Endocrine |
| | | | CYANIDE | NA | NA | | **NA** | 6.8E-03 | 1.3E-03 | | **8.1E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 1.5E-02 | 2.8E-03 | | **1.8E-02** | Gastrointestinal | NA |
| | | | MANGANESE | NA | NA | | **NA** | 3.6E-02 | 1.7E-01 | | **2.1E-01** | Nervous system | Nervous system |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 2.7E-09 | 7.7E-07 | | **7.7E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 7.9E-08 | 3.4E-05 | | **3.5E-05** | 6.2E-04 | 2.7E-01 | | **2.7E-01** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 5.3E-09 | 1.3E-06 | | **1.3E-06** | NA | NA | | **NA** | NA | NA |
| | | | BIS(2-ETHYLHEXYL) PHTHALATE | 3.3E-09 | 4.5E-06 | | **4.5E-06** | 8.3E-05 | 1.1E-01 | | **1.1E-01** | Hepatic | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 2.7E-08 | 1.1E-05 | | **1.1E-05** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 3.5E-09 | 1.8E-06 | | **1.9E-06** | NA | NA | | **NA** | NA | NA |
| **Exposure Point Total - SL** | | | | 1.0E-05 | 6.7E-05 | 0.0E+00 | **8E-05** | 2.3E-01 | 6.1E-01 | 0.0E+00 | **8E-01** | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| | | | | | | | | **Total Organ HI (SL)** | | | | | |
| | | | | | | | | Developmental | | | 3E-01 | | |
| | | | | | | | | Endocrine | | | 2E-02 | | |
| | | | | | | | | Gastrointestinal | | | 3E-02 | | |
| | | | | | | | | Hematological | | | 4E-03 | | |
| | | | | | | | | Hepatic | | | 1E-01 | | |
| | | | | | | | | Immunological | | | 5E-03 | | |
| | | | | | | | | Nervous System | | | 2E-01 | | |
| | | | | | | | | None Observed | | | 7E-03 | | |
| | | | | | | | | Reproductive | | | 1E-02 | | |
| | | | | | | | | Skin | | | 1E-01 | | |
| Sediment | Sediment | BWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 9.5E-03 | NA | | **9.5E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 1.2E-02 | NA | | **1.2E-02** | Hematological | NA |
| | | | ARSENIC | 2.4E-05 | 1.1E-05 | | **3.5E-05** | 3.7E-01 | 1.7E-01 | | **5.4E-01** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | | **NA** | 8.7E-03 | 3.2E-03 | | **1.2E-02** | Renal | Renal |
| | | | CHROMIUM | 1.1E-06 | NA | | **1.1E-06** | 1.7E-03 | NA | | **1.7E-03** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 3.6E-02 | NA | | **3.6E-02** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 2.9E-03 | NA | | **2.9E-03** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 1.6E-02 | NA | | **1.6E-02** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 3.9E-02 | NA | | **3.9E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 3.0E-03 | NA | | **3.0E-03** | Nervous system | Nervous system |
| | | | VANADIUM | NA | NA | | **NA** | 7.3E-03 | NA | | **7.3E-03** | Systemic | Respiratory |
| | | | ZINC | NA | NA | | **NA** | 2.4E-03 | NA | | **2.4E-03** | Hematological | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 1.5E-08 | 1.9E-08 | | **3.4E-08** | 2.6E-03 | 3.4E-03 | | **6.0E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 3.7E-08 | 4.5E-08 | | **8.3E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 3.8E-07 | 4.6E-07 | | **8.4E-07** | 3.0E-03 | 3.6E-03 | | **6.5E-03** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 5.6E-08 | 6.8E-08 | | **1.2E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 5.5E-09 | 6.6E-09 | | **1.2E-08** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 7.9E-08 | 9.6E-08 | | **1.7E-07** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 2.1E-08 | 2.5E-08 | | **4.6E-08** | NA | NA | | **NA** | NA | NA |
| | | | NAPHTHALENE | NA | NA | | **NA** | 9.2E-05 | 1.1E-04 | | **2.0E-04** | Systemic | Respiratory |
| | | | **VOCs** | | | | | | | | | | |
| | | | TRICHLOROETHYLENE (TCE) | 4.0E-10 | NA | | **4.0E-10** | 8.7E-05 | NA | | **8.7E-05** | Developmental | Developmental |
| Surface Water | Surface Water | BWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 1.2E-03 | 2.2E-04 | | **1.4E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 2.7E-03 | 3.3E-03 | | **6.0E-03** | Hematological | NA |
| | | | ARSENIC | 6.1E-06 | 1.1E-06 | | **7.2E-06** | 9.4E-02 | 1.8E-02 | | **1.1E-01** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | | **NA** | 1.1E-03 | 4.3E-03 | | **5.5E-03** | Renal | Renal |
| | | | CHROMIUM | 8.9E-07 | 6.7E-06 | | **7.5E-06** | 1.4E-03 | 1.0E-02 | | **1.2E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 3.1E-03 | 2.3E-04 | | **3.3E-03** | Endocrine | Endocrine |
| | | | CYANIDE | NA | NA | | **NA** | 3.1E-03 | 5.8E-04 | | **3.7E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 8.6E-03 | 1.6E-03 | | **1.0E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 2.7E-03 | 1.3E-02 | | **1.5E-02** | Nervous system | Nervous system |
| | | | THALLIUM | NA | NA | | **NA** | 1.1E-01 | 2.1E-02 | | **1.4E-01** | Skin | NA |
| | | | VANADIUM | NA | NA | | **NA** | 4.5E-04 | 3.3E-03 | | **3.7E-03** | Systemic | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 1.3E-08 | 5.9E-06 | | **5.9E-06** | 1.0E-04 | 4.6E-02 | | **4.6E-02** | Developmental | Developmental |
| **Exposure Point Total - BWL** | | | | 3.2E-05 | 2.5E-05 | 0.0E+00 | **6E-05** | 7.5E-01 | 3.0E-01 | 0.0E+00 | **1E+00** | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| | | | | | | | | **Total Organ HI (BWL)** | | | | | |
| | | | | | | | | Developmental | | | 5E-02 | | |
| | | | | | | | | Endocrine | | | 4E-02 | | |
| | | | | | | | | Gastrointestinal | | | 5E-02 | | |
| | | | | | | | | Hematological | | | 2E-02 | | |
| | | | | | | | | Immunological | | | 6E-03 | | |
| | | | | | | | | Nervous System | | | 3E-02 | | |
| | | | | | | | | None Observed | | | 1E-02 | | |
| | | | | | | | | Renal | | | 2E-02 | | |
| | | | | | | | | Reproductive | | | 2E-02 | | |
| | | | | | | | | Skin | | | 8E-01 | | |
| | | | | | | | | Systemic | | | 1E-02 | | |
| Sediment | Sediment | KWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 1.0E-02 | NA | | **1.0E-02** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 3.3E-03 | NA | | **3.3E-03** | Hematological | NA |
| | | | ARSENIC | 7.3E-06 | 3.4E-06 | | **1.1E-05** | 1.1E-01 | 5.3E-02 | | **1.7E-01** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | | **NA** | 5.0E-03 | 1.9E-03 | | **6.9E-03** | Renal | Renal |
| | | | CHROMIUM | 1.2E-06 | NA | | **1.2E-06** | 1.9E-03 | NA | | **1.9E-03** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 1.9E-02 | NA | | **1.9E-02** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 3.4E-03 | NA | | **3.4E-03** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 4.4E-03 | NA | | **4.4E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 2.5E-02 | NA | | **2.5E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 3.8E-03 | NA | | **3.8E-03** | Nervous system | Nervous system |
| | | | NICKEL | NA | NA | | **NA** | 1.2E-03 | NA | | **1.2E-03** | Systemic | Respiratory |
| | | | THALLIUM | NA | NA | | **NA** | 3.0E-02 | NA | | **3.0E-02** | Skin | NA |
| | | | VANADIUM | NA | NA | | **NA** | 3.4E-03 | NA | | **3.4E-03** | Systemic | Respiratory |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 3.0E-08 | 4.0E-08 | | **7.0E-08** | 5.3E-03 | 6.9E-03 | | **1.2E-02** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 3.2E-08 | 3.8E-08 | | **7.0E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 3.0E-07 | 3.6E-07 | | **6.6E-07** | 2.3E-03 | 2.8E-03 | | **5.1E-03** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 3.9E-08 | 4.6E-08 | | **8.5E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 3.4E-09 | 4.1E-09 | | **7.4E-09** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 4.5E-08 | 5.5E-08 | | **1.0E-07** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 1.2E-08 | 1.4E-08 | | **2.5E-08** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | KWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 1.3E-03 | 2.4E-04 | | **1.5E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 8.5E-03 | 1.1E-02 | | **1.9E-02** | Hematological | NA |
| | | | ARSENIC | 3.3E-06 | 6.2E-07 | | **3.9E-06** | 5.1E-02 | 9.7E-03 | | **6.1E-02** | Skin | Respiratory |
| | | | CHROMIUM | 1.1E-06 | 7.9E-06 | | **9.0E-06** | 1.6E-03 | 1.2E-02 | | **1.4E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 4.9E-03 | 3.7E-04 | | **5.3E-03** | Endocrine | Endocrine |
| | | | CYANIDE | NA | NA | | **NA** | 2.8E-03 | 5.2E-04 | | **3.3E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 4.7E-03 | 8.9E-04 | | **5.6E-03** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 3.1E-03 | 1.4E-02 | | **1.7E-02** | Nervous system | Nervous system |
| | | | THALLIUM | NA | NA | | **NA** | 5.4E-01 | 1.0E-01 | | **6.4E-01** | Skin | NA |
| **Exposure Point Total - KWL** | | | | 1.3E-05 | 1.3E-05 | 0.0E+00 | **3E-05** | 8.5E-01 | 2.1E-01 | 0.0E+00 | **1E+00** | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| | | | | | | | | **Total Organ HI (KWL)** | | | | | |
| | | | | | | | | Developmental | | | 5E-03 | | |
| | | | | | | | | Endocrine | | | 2E-02 | | |
| | | | | | | | | Gastrointestinal | | | 3E-02 | | |
| | | | | | | | | Hematological | | | 2E-02 | | |
| | | | | | | | | Immunological | | | 1E-02 | | |
| | | | | | | | | Nervous System | | | 3E-02 | | |
| | | | | | | | | None Observed | | | 2E-02 | | |
| | | | | | | | | Renal | | | 7E-03 | | |
| | | | | | | | | Reproductive | | | 8E-03 | | |
| | | | | | | | | Skin | | | 9E-01 | | |
| | | | | | | | | Systemic | | | 5E-03 | | |

**Table 9.6**
**Chemical Cancer Risks and Non-Cancer Hazards**
**Reasonable Maximum Exposure**
**Swimmer - Child**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Sediment | Sediment | SL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 1.1E-02 | NA | | **1.1E-02** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 2.2E-02 | NA | | **2.2E-02** | Hematological | NA |
| | | | ARSENIC | 2.9E-06 | 3.5E-07 | | **3.3E-06** | 7.6E-02 | 9.0E-03 | | **8.4E-02** | Skin | Respiratory |
| | | | CHROMIUM | 9.6E-07 | NA | | **9.6E-07** | 1.0E-03 | NA | | **1.0E-03** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 7.9E-02 | NA | | **7.9E-02** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 9.7E-03 | NA | | **9.7E-03** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 1.7E-02 | NA | | **1.7E-02** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 4.4E-02 | NA | | **4.4E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 1.7E-02 | NA | | **1.7E-02** | Nervous system | Nervous system |
| | | | THALLIUM | NA | NA | | **NA** | 3.3E-01 | NA | | **3.3E-01** | Skin | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 4.3E-08 | 1.4E-08 | | **5.7E-08** | 1.2E-02 | 4.1E-03 | | **1.7E-02** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 4.7E-06 | 1.3E-06 | | **6.0E-06** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 3.5E-05 | 9.6E-06 | | **4.5E-05** | 1.9E-01 | 5.8E-02 | | **2.5E-01** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 7.1E-06 | 1.9E-06 | | **9.0E-06** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 1.5E-07 | 4.1E-08 | | **1.9E-07** | NA | NA | | **NA** | NA | NA |
| | | | CHRYSENE | 7.1E-08 | 1.9E-08 | | **9.1E-08** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 3.6E-06 | 9.8E-07 | | **4.6E-06** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 9.7E-07 | 2.7E-07 | | **1.2E-06** | NA | NA | | **NA** | NA | NA |
| | | | **TICs** | | | | | | | | | | |
| | | | BENZO[J]FLUORANTHENE | 4.7E-06 | 1.5E-06 | | **6.2E-06** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | SL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 6.3E-06 | 3.4E-07 | | **6.7E-06** | 1.6E-01 | 8.7E-03 | | **1.7E-01** | Skin | Respiratory |
| | | | CHROMIUM | 5.0E-06 | 8.6E-06 | | **1.4E-05** | 5.4E-03 | 1.1E-02 | | **1.7E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 4.5E-02 | 9.5E-04 | | **4.6E-02** | Endocrine | Endocrine |
| | | | CYANIDE | NA | NA | | **NA** | 4.7E-02 | 2.5E-03 | | **4.9E-02** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 1.0E-01 | 5.4E-03 | | **1.1E-01** | Gastrointestinal | NA |
| | | | MANGANESE | NA | NA | | **NA** | 2.5E-01 | 3.3E-01 | | **5.8E-01** | Nervous system | Nervous system |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 2.6E-08 | 1.5E-06 | | **1.5E-06** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 7.9E-07 | 6.7E-05 | | **6.7E-05** | 4.2E-03 | 4.4E-01 | | **4.5E-01** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 5.2E-08 | 2.6E-06 | | **2.6E-06** | NA | NA | | **NA** | NA | NA |
| | | | BIS(2-ETHYLHEXYL) PHTHALATE | 1.4E-08 | 4.4E-06 | | **4.4E-06** | 5.6E-04 | 1.8E-01 | | **1.8E-01** | Hepatic | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 2.7E-07 | 2.2E-05 | | **2.2E-05** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 3.5E-08 | 3.6E-06 | | **3.6E-06** | NA | NA | | **NA** | NA | NA |
| **Exposure Point Total - SL** | | | | 7.3E-05 | 1.3E-04 | 0.0E+00 | **2E-04** | 1.4E+00 | 1.1E+00 | 0.0E+00 | **2E+00** | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| | | | | | | | | **Total Organ HI (SL)** | | | | | |
| | | | | | | | | Developmental | | | 7E-01 | | |
| | | | | | | | | Endocrine | | | 1E-01 | | |
| | | | | | | | | Gastrointestinal | | | 2E-01 | | |
| | | | | | | | | Hematological | | | 2E-02 | | |
| | | | | | | | | Hepatic | | | 2E-01 | | |
| | | | | | | | | Immunological | | | 2E-02 | | |
| | | | | | | | | Nervous System | | | 6E-01 | | |
| | | | | | | | | None Observed | | | 2E-02 | | |
| | | | | | | | | Reproductive | | | 7E-02 | | |
| | | | | | | | | Skin | | | 6E-01 | | |
| Sediment | Sediment | BWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 5.6E-02 | NA | | **5.6E-02** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 7.0E-02 | NA | | **7.0E-02** | Hematological | NA |
| | | | ARSENIC | 8.4E-05 | 1.0E-05 | | **9.4E-05** | 2.2E+00 | 2.6E-01 | | **2.4E+00** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | | **NA** | 5.1E-02 | 4.9E-03 | | **5.6E-02** | Renal | Renal |
| | | | CHROMIUM | 9.3E-06 | NA | | **9.3E-06** | 9.9E-03 | NA | | **9.9E-03** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 2.1E-01 | NA | | **2.1E-01** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 1.7E-02 | NA | | **1.7E-02** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 9.7E-02 | NA | | **9.7E-02** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 2.3E-01 | NA | | **2.3E-01** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 1.8E-02 | NA | | **1.8E-02** | Nervous system | Nervous system |
| | | | VANADIUM | NA | NA | | **NA** | 4.3E-02 | NA | | **4.3E-02** | Systemic | Respiratory |
| | | | ZINC | NA | NA | | **NA** | 1.4E-02 | NA | | **1.4E-02** | Hematological | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 5.3E-08 | 1.7E-08 | | **7.0E-08** | 1.5E-02 | 5.1E-03 | | **2.0E-02** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 3.2E-07 | 8.8E-08 | | **4.1E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 3.3E-06 | 9.0E-07 | | **4.2E-06** | 1.8E-02 | 5.4E-03 | | **2.3E-02** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 4.8E-07 | 1.3E-07 | | **6.2E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 4.7E-08 | 1.3E-08 | | **6.0E-08** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 6.8E-07 | 1.9E-07 | | **8.7E-07** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 1.8E-07 | 4.9E-08 | | **2.3E-07** | NA | NA | | **NA** | NA | NA |
| | | | NAPHTHALENE | NA | NA | | **NA** | 5.5E-04 | 1.7E-04 | | **7.1E-04** | Systemic | Respiratory |
| | | | **VOCs** | | | | | | | | | | |
| | | | TRICHLOROETHYLENE (TCE) | 2.3E-09 | NA | | **2.3E-09** | 5.1E-04 | NA | | **5.1E-04** | Developmental | Developmental |
| Surface Water | Surface Water | BWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 8.1E-03 | 4.3E-04 | | **8.5E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 1.8E-02 | 6.4E-03 | | **2.5E-02** | Hematological | NA |
| | | | ARSENIC | 2.5E-05 | 1.3E-06 | | **2.6E-05** | 6.4E-01 | 3.4E-02 | | **6.8E-01** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | | **NA** | 7.8E-03 | 8.3E-03 | | **1.6E-02** | Renal | Renal |
| | | | CHROMIUM | 8.8E-06 | 1.5E-05 | | **2.4E-05** | 9.4E-03 | 2.0E-02 | | **2.9E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 2.1E-02 | 4.5E-04 | | **2.2E-02** | Endocrine | Endocrine |
| | | | CYANIDE | NA | NA | | **NA** | 2.1E-02 | 1.1E-03 | | **2.2E-02** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 5.8E-02 | 3.1E-03 | | **6.2E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 1.8E-02 | 2.4E-02 | | **4.3E-02** | Nervous system | Nervous system |
| | | | THALLIUM | NA | NA | | **NA** | 7.8E-01 | 4.1E-02 | | **8.2E-01** | Skin | NA |
| | | | VANADIUM | NA | NA | | **NA** | 3.1E-03 | 6.3E-03 | | **9.4E-03** | Systemic | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 1.3E-07 | 1.1E-05 | | **1.1E-05** | 7.1E-04 | 7.5E-02 | | **7.6E-02** | Developmental | Developmental |
| **Exposure Point Total - BWL** | | | | 1.3E-04 | 3.9E-05 | 0.0E+00 | **2E-04** | 4.6E+00 | 5.0E-01 | 0.0E+00 | **5E+00** | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| | | | | | | | | **Total Organ HI (BWL)** | | | | | |
| | | | | | | | | Developmental | | | 1E-01 | | |
| | | | | | | | | Endocrine | | | 2E-01 | | |
| | | | | | | | | Gastrointestinal | | | 3E-01 | | |
| | | | | | | | | Hematological | | | 1E-01 | | |
| | | | | | | | | Immunological | | | 2E-02 | | |
| | | | | | | | | Nervous System | | | 1E-01 | | |
| | | | | | | | | None Observed | | | 4E-02 | | |
| | | | | | | | | Renal | | | 7E-02 | | |
| | | | | | | | | Reproductive | | | 1E-01 | | |
| | | | | | | | | Skin | | | 4E+00 | | |
| | | | | | | | | Systemic | | | 5E-02 | | |
| Sediment | Sediment | KWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 6.2E-02 | NA | | **6.2E-02** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 2.0E-02 | NA | | **2.0E-02** | Hematological | NA |
| | | | ARSENIC | 2.6E-05 | 3.1E-06 | | **2.9E-05** | 6.8E-01 | 8.0E-02 | | **7.6E-01** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | | **NA** | 3.0E-02 | 2.8E-03 | | **3.2E-02** | Renal | Renal |
| | | | CHROMIUM | 1.0E-05 | NA | | **1.0E-05** | 1.1E-02 | NA | | **1.1E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 1.1E-01 | NA | | **1.1E-01** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 2.0E-02 | NA | | **2.0E-02** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 2.6E-02 | NA | | **2.6E-02** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 1.5E-01 | NA | | **1.5E-01** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 2.3E-02 | NA | | **2.3E-02** | Nervous system | Nervous system |
| | | | NICKEL | NA | NA | | **NA** | 7.0E-03 | NA | | **7.0E-03** | Systemic | Respiratory |
| | | | THALLIUM | NA | NA | | **NA** | 1.8E-01 | NA | | **1.8E-01** | Skin | NA |
| | | | VANADIUM | NA | NA | | **NA** | 2.0E-02 | NA | | **2.0E-02** | Systemic | Respiratory |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 1.1E-07 | 3.6E-08 | | **1.4E-07** | 3.1E-02 | 1.0E-02 | | **4.2E-02** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 2.7E-07 | 7.5E-08 | | **3.5E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 2.6E-06 | 7.0E-07 | | **3.3E-06** | 1.4E-02 | 4.2E-03 | | **1.8E-02** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 3.3E-07 | 9.1E-08 | | **4.2E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 2.9E-08 | 7.9E-09 | | **3.7E-08** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 3.9E-07 | 1.1E-07 | | **5.0E-07** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 9.9E-08 | 2.7E-08 | | **1.3E-07** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | KWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 8.6E-03 | 4.6E-04 | | **9.1E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 5.8E-02 | 2.1E-02 | | **7.9E-02** | Hematological | NA |
| | | | ARSENIC | 1.4E-05 | 7.2E-07 | | **1.4E-05** | 3.5E-01 | 1.9E-02 | | **3.7E-01** | Skin | Respiratory |
| | | | CHROMIUM | 1.0E-05 | 1.8E-05 | | **2.8E-05** | 1.1E-02 | 2.4E-02 | | **3.5E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 3.4E-02 | 7.1E-04 | | **3.4E-02** | Endocrine | Endocrine |
| | | | CYANIDE | NA | NA | | **NA** | 1.9E-02 | 1.0E-03 | | **2.0E-02** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 3.2E-02 | 1.7E-03 | | **3.4E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 2.1E-02 | 2.8E-02 | | **4.9E-02** | Nervous system | Nervous system |
| | | | THALLIUM | NA | NA | | **NA** | 3.7E+00 | 1.9E-01 | | **3.8E+00** | Skin | NA |
| **Exposure Point Total - KWL** | | | | 6.4E-05 | 2.3E-05 | 0.0E+00 | **9E-05** | 5.6E+00 | 3.9E-01 | 0.0E+00 | **6E+00** | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| | | | | | | | | **Total Organ HI (KWL)** | | | | | |
| | | | | | | | | Developmental | | | 2E-02 | | |
| | | | | | | | | Endocrine | | | 1E-01 | | |
| | | | | | | | | Gastrointestinal | | | 2E-01 | | |
| | | | | | | | | Hematological | | | 1E-01 | | |
| | | | | | | | | Immunological | | | 4E-02 | | |
| | | | | | | | | Nervous System | | | 1E-01 | | |
| | | | | | | | | None Observed | | | 5E-02 | | |
| | | | | | | | | Renal | | | 3E-02 | | |
| | | | | | | | | Reproductive | | | 5E-02 | | |
| | | | | | | | | Skin | | | 5E+00 | | |
| | | | | | | | | Systemic | | | 3E-02 | | |

**Table 9.7**
**Chemical Cancer Risks and Non-cancer Hazards**
**Reasonable Maximum Exposure**
**Angler - Adult**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | Non-carcinogenic Hazard Quotient | Target Organ |
|---|---|---|---|---|---|---|
| | | | | Ingestion | Ingestion | RfD |
| Fish | Tissue | KWL | **Metals** | | | |
| | | | ARSENIC | 1.8E-06 | 1.1E-02 | Skin |
| | | | CHROMIUM | 1.3E-05 | 2.3E-02 | None Observed |
| | | | LEAD | NA | NA | NA |
| | | | **PEST/PCB** | | | |
| | | | 4,4'-DDD | 3.4E-07 | 1.3E-01 | Hematological |
| | | | 4,4'-DDE | 6.3E-07 | 1.7E-02 | Hematological |
| | | | AROCLOR-1254 | 1.3E-05 | 8.7E-01 | Immunological |
| | | | AROCLOR-1260 | 5.4E-06 | 3.6E-01 | Immunological |
| **Exposure Point Total - KWL** | | | | **3.4E-05** | **1.4E+00** | |
| | | | | | **Total Organ HI (KWL)** | |
| | | | | | Hematological | 1E-01 |
| | | | | | Immunological | 1E+00 |
| | | | | | None Observed | 2E-02 |
| | | | | | Skin | 1E-02 |

**Table 9.8**
**Chemical Cancer Risks and Non-cancer Hazards**
**Reasonable Maximum Exposure**
**Angler - Adolescent**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | Non-carcinogenic Hazard Quotient | Target Organ |
|---|---|---|---|---|---|---|
| | | | | Ingestion | Ingestion | RfD |
| Fish | Tissue | KWL | **Metals** | | | |
| | | | ARSENIC | 8.4E-07 | 1.3E-02 | Skin |
| | | | CHROMIUM | 1.8E-05 | 2.8E-02 | None Observed |
| | | | LEAD | NA | NA | NA |
| | | | **PEST/PCB** | | | |
| | | | 4,4'-DDD | 1.6E-07 | 1.5E-01 | Hematological |
| | | | 4,4'-DDE | 2.9E-07 | 2.0E-02 | Hematological |
| | | | AROCLOR-1254 | 5.9E-06 | 1.0E+00 | Immunological |
| | | | AROCLOR-1260 | 2.4E-06 | 4.3E-01 | Immunological |
| **Exposure Point Total - KWL** | | | | **2.7E-05** | **1.7E+00** | |
| | | | | | **Total Organ HI (KWL)** | |
| | | | | | Hematological | 2E-01 |
| | | | | | Immunological | 1E+00 |
| | | | | | None Observed | 3E-02 |
| | | | | | Skin | 1E-02 |

**Table 9.9**
**Chemical Cancer Risks and Non-cancer Hazards**
**Reasonable Maximum Exposure**
**Angler - Child**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | Non-carcinogenic Hazard Quotient | Target Organ |
|---|---|---|---|---|---|---|
| | | | | Ingestion | Ingestion | RfD |
| Fish | Tissue | KWL | **Metals** | | | |
| | | | ARSENIC | 7.9E-07 | 2.0E-02 | Skin |
| | | | CHROMIUM | 4.0E-05 | 4.3E-02 | None Observed |
| | | | LEAD | NA | NA | NA |
| | | | **PEST/PCB** | | | |
| | | | 4,4'-DDD | 1.5E-07 | 2.4E-01 | Hematological |
| | | | 4,4'-DDE | 2.7E-07 | 3.1E-02 | Hematological |
| | | | AROCLOR-1254 | 5.5E-06 | 1.6E+00 | Immunological |
| | | | AROCLOR-1260 | 2.3E-06 | 6.7E-01 | Immunological |
| **Exposure Point Total - KWL** | | | | **4.9E-05** | **2.6E+00** | |
| | | | | | **Total Organ HI (KWL)** | |
| | | | | | Hematological | 3E-01 |
| | | | | | Immunological | 2E+00 |
| | | | | | None Observed | 4E-02 |
| | | | | | Skin | 2E-02 |

**Table 10.1**
**Risk Assessment Summary**
**Reasonable Maximum Exposure**
**Recreator - Adult**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Sediment | Sediment | SL | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 8.2E-07 | 1.3E-06 | | **2.1E-06** | 7.4E-03 | 1.2E-02 | | **1.9E-02** | Developmental | Developmental |
| | | | **TICs** | | | | | | | | | | |
| | | | BENZO[J]FLUORANTHENE | 8.1E-07 | 1.3E-06 | | **2.1E-06** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | SL | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | | 2.2E-06 | | **2.2E-06** | | 2.0E-02 | | **2.0E-02** | Developmental | Developmental |
| **Exposure Point Total - SL** | | | | 2.5E-06 | 7.7E-06 | 0.0E+00 | **1E-05** | 3.2E-02 | 5.2E-02 | 0.0E+00 | **8E-02** | | |
| Soil | Soil | BWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 2.0E-05 | 4.2E-06 | 7.8E-09 | **2.4E-05** | 1.2E-01 | 2.5E-02 | 3.2E-04 | **1.4E-01** | Skin | Respiratory |
| Sediment | Sediment | BWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 1.4E-05 | 8.6E-06 | | **2.3E-05** | 8.5E-02 | 5.2E-02 | | **1.4E-01** | Skin | Respiratory |
| **Exposure Point Total - BWL** | | | | 3.5E-05 | 1.4E-05 | 1.1E-08 | **5E-05** | 2.9E-01 | 8.7E-02 | 1.7E-03 | **4E-01** | | |
| Soil | Soil | HC | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 8.5E-05 | 1.8E-05 | 3.4E-08 | **1.0E-04** | 5.1E-01 | 1.1E-01 | 1.4E-03 | **6.2E-01** | Skin | Respiratory |
| | | | CHROMIUM | 3.1E-06 | NA | 4.3E-08 | **3.1E-06** | 5.5E-03 | NA | 1.4E-05 | **5.5E-03** | None Observed | Respiratory |
| Sediment | Sediment | HC | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 1.9E-05 | 1.2E-05 | | **3.1E-05** | 1.2E-01 | 7.0E-02 | | **1.9E-01** | Skin | Respiratory |
| Surface Water | Surface Water | HC | **Metals** | | | | | | | | | | |
| | | | CHROMIUM | | 7.9E-06 | | **7.9E-06** | | 1.4E-02 | | **1.4E-02** | None Observed | Respiratory |
| **Exposure Point Total - HC** | | | | 1.1E-04 | 3.9E-05 | 9.0E-08 | **1E-04** | 8.3E-01 | 2.1E-01 | 1.1E-01 | **1E+00** | | |
| Soil | Soil | KWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 1.4E-06 | 3.1E-07 | 5.7E-10 | **1.8E-06** | 8.6E-03 | 1.8E-03 | 2.4E-05 | **1.0E-02** | Skin | Respiratory |
| Sediment | Sediment | KWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 4.4E-06 | 2.7E-06 | | **7.1E-06** | 2.7E-02 | 1.6E-02 | | **4.3E-02** | Skin | Respiratory |
| **Exposure Point Total - KWL** | | | | 6.3E-06 | 3.6E-06 | 1.9E-09 | **1E-05** | 1.0E-01 | 2.9E-02 | 9.1E-04 | **1E-01** | | |

**Table 10.2**
**Risk Assessment Summary**
**Reasonable Maximum Exposure**
**Recreator - Adolescent**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Sediment | Sediment | SL | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 1.7E-06 | 2.1E-06 | | **3.8E-06** | 1.3E-02 | 1.6E-02 | | **2.9E-02** | Developmental | Developmental |
| | | | **TICs** | | | | | | | | | | |
| | | | BENZO[J]FLUORANTHENE | 5.6E-07 | 6.8E-07 | | **1.2E-06** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | SL | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | | 3.5E-06 | | **3.5E-06** | | 2.8E-02 | | **2.8E-02** | Developmental | Developmental |
| | | | DIBENZO(A,H)ANTHRACENE | | 1.2E-06 | | **1.2E-06** | | NA | | **NA** | NA | NA |
| **Exposure Point Total - SL** | | | | 3.5E-06 | 9.7E-06 | 0.0E+00 | **1E-05** | 5.7E-02 | 7.2E-02 | 0.0E+00 | **1E-01** | | |
| Soil | Soil | BWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 1.4E-05 | 2.2E-06 | 3.0E-09 | **1.6E-05** | 2.1E-01 | 3.5E-02 | 3.2E-04 | **2.5E-01** | Skin | Respiratory |
| Sediment | Sediment | BWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 9.9E-06 | 4.6E-06 | | **1.5E-05** | 1.5E-01 | 7.2E-02 | | **2.3E-01** | Skin | Respiratory |
| **Exposure Point Total - BWL** | | | | 2.5E-05 | 8.3E-06 | 6.1E-09 | **3E-05** | 5.3E-01 | 1.2E-01 | 1.7E-03 | **7E-01** | | |
| Soil | Soil | HC | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 5.9E-05 | 9.6E-06 | 1.3E-08 | **6.9E-05** | 9.2E-01 | 1.5E-01 | 1.4E-03 | **1.1E+00** | Skin | Respiratory |
| | | | CHROMIUM | 6.4E-06 | NA | 4.9E-08 | **6.4E-06** | 9.9E-03 | NA | 1.4E-05 | **1.0E-02** | None Observed | Respiratory |
| Sediment | Sediment | HC | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 1.3E-05 | 6.3E-06 | | **2.0E-05** | 2.1E-01 | 9.7E-02 | | **3.1E-01** | Skin | Respiratory |
| | | | CHROMIUM | 1.3E-06 | NA | | **1.3E-06** | 2.0E-03 | NA | | **2.0E-03** | None Observed | Respiratory |
| Surface Water | Surface Water | HC | **Metals** | | | | | | | | | | |
| | | | CHROMIUM | | 1.3E-05 | | **1.3E-05** | | 2.0E-02 | | **2.0E-02** | None Observed | Respiratory |
| **Exposure Point Total - HC** | | | | 8.2E-05 | 2.9E-05 | 6.8E-08 | **1E-04** | 1.5E+00 | 3.0E-01 | 1.1E-01 | **2E+00** | | |
| | | | | | | | | **Total Organ HI (HC)** | | | | | |
| | | | | | | | | Skin | | | 1E+00 | | |
| Soil | Soil | KWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 1.0E-06 | 1.6E-07 | 2.2E-10 | **1.2E-06** | 1.6E-02 | 2.5E-03 | 2.4E-05 | **1.8E-02** | Skin | Respiratory |
| Sediment | Sediment | KWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 3.1E-06 | 1.4E-06 | | **4.5E-06** | 4.8E-02 | 2.2E-02 | | **7.0E-02** | Skin | Respiratory |
| **Exposure Point Total - KWL** | | | | 5.0E-06 | 2.5E-06 | 1.7E-09 | **7E-06** | 1.8E-01 | 4.1E-02 | 9.1E-04 | **2E-01** | | |

**Table 10.3**
**Risk Assessment Summary**
**Reasonable Maximum Exposure**
**Recreator - Child**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Sediment | Sediment | SL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 1.2E-06 | 1.4E-07 | | **1.4E-06** | 3.2E-02 | 3.8E-03 | | **3.5E-02** | Skin | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 2.0E-06 | 5.4E-07 | | **2.5E-06** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 1.5E-05 | 4.0E-06 | | **1.9E-05** | 7.8E-02 | 2.4E-02 | | **1.0E-01** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 3.0E-06 | 8.1E-07 | | **3.8E-06** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 1.5E-06 | 4.1E-07 | | **1.9E-06** | NA | NA | | **NA** | NA | NA |
| | | | **TICs** | | | | | | | | | | |
| | | | BENZO[J]FLUORANTHENE | 2.0E-06 | 6.1E-07 | | **2.6E-06** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | SL | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | | 6.9E-06 | | **6.9E-06** | | 4.2E-02 | | **4.2E-02** | Developmental | Developmental |
| | | | DIBENZO(A,H)ANTHRACENE | | 2.2E-06 | | **2.2E-06** | | NA | | **NA** | NA | NA |
| **Exposure Point Total - SL** | | | | 2.5E-05 | 1.8E-05 | 0.0E+00 | **4E-05** | 3.4E-01 | 1.1E-01 | 0.0E+00 | **4E-01** | | |
| Soil | Soil | BWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 4.9E-05 | 5.8E-06 | 1.8E-09 | **5.4E-05** | 1.3E+00 | 1.5E-01 | 3.2E-04 | **1.4E+00** | Skin | Respiratory |
| | | | CHROMIUM | 3.4E-06 | NA | 3.3E-09 | **3.5E-06** | 3.7E-03 | NA | 8.5E-07 | **3.7E-03** | None Observed | Respiratory |
| | | | THALLIUM | NA | NA | NA | **NA** | 4.7E-01 | NA | NA | **4.7E-01** | Skin | NA |
| Sediment | Sediment | BWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 3.5E-05 | 4.2E-06 | | **3.9E-05** | 9.1E-01 | 1.1E-01 | | **1.0E+00** | Skin | Respiratory |
| | | | CHROMIUM | 3.9E-06 | NA | | **3.9E-06** | 4.2E-03 | NA | | **4.2E-03** | None Observed | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 1.4E-06 | 3.8E-07 | | **1.8E-06** | 7.3E-03 | 2.3E-03 | | **9.6E-03** | Developmental | Developmental |
| Surface Water | Surface Water | BWL | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | | 1.2E-06 | | **1.2E-06** | | 7.1E-03 | | **7.1E-03** | Developmental | Developmental |
| **Exposure Point Total - BWL** | | | | 9.4E-05 | 1.3E-05 | 5.1E-09 | **1E-04** | 3.1E+00 | 2.8E-01 | 1.7E-03 | **3E+00** | | |
| | | | | | | | | **Total Organ HI (BWL)** | | | | | |
| | | | | | | | | Skin | | | 3E+00 | | |
| Soil | Soil | HC | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 2.1E-04 | 2.5E-05 | 7.8E-09 | **2.3E-04** | 5.4E+00 | 6.5E-01 | 1.4E-03 | **6.1E+00** | Skin | Respiratory |
| | | | CHROMIUM | 5.5E-05 | NA | 5.2E-08 | **5.5E-05** | 5.9E-02 | NA | 1.4E-05 | **5.9E-02** | None Observed | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 6.0E-06 | 1.6E-06 | 2.0E-11 | **7.6E-06** | 3.2E-02 | 9.9E-03 | 3.7E-05 | **4.2E-02** | Developmental | Developmental |
| | | | DIBENZO(A,H)ANTHRACENE | 1.0E-06 | 2.8E-07 | 3.4E-12 | **1.3E-06** | NA | NA | NA | **NA** | NA | NA |
| Sediment | Sediment | HC | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 4.8E-05 | 5.7E-06 | | **5.3E-05** | 1.2E+00 | 1.5E-01 | | **1.4E+00** | Skin | Respiratory |
| | | | CHROMIUM | 1.1E-05 | NA | | **1.1E-05** | 1.2E-02 | NA | | **1.2E-02** | None Observed | Respiratory |
| Surface Water | Surface Water | HC | **Metals** | | | | | | | | | | |
| | | | CHROMIUM | | 2.5E-05 | | **2.5E-05** | | 3.0E-02 | | **3.0E-02** | None Observed | Respiratory |
| **Exposure Point Total - HC** | | | | 3.3E-04 | 5.8E-05 | 6.4E-08 | **4E-04** | 8.9E+00 | 8.9E-01 | 1.1E-01 | **1E+01** | | |
| | | | | | | | | **Total Organ HI (HC)** | | | | | |
| | | | | | | | | Skin | | | 8E+00 | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Soil | Soil | KWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 3.6E-06 | 4.2E-07 | 1.3E-10 | **4.0E-06** | 9.2E-02 | 1.1E-02 | 2.4E-05 | **1.0E-01** | Skin | Respiratory |
| | | | CHROMIUM | 1.6E-06 | NA | 1.5E-09 | **1.6E-06** | 1.7E-03 | NA | 3.9E-07 | **1.7E-03** | None Observed | Respiratory |
| | | | THALLIUM | NA | NA | NA | **NA** | 2.4E-01 | NA | NA | **2.4E-01** | Skin | NA |
| Sediment | Sediment | KWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 1.1E-05 | 1.3E-06 | | **1.2E-05** | 2.8E-01 | 3.4E-02 | | **3.2E-01** | Skin | Respiratory |
| | | | CHROMIUM | 4.3E-06 | NA | | **4.3E-06** | 4.6E-03 | NA | | **4.6E-03** | None Observed | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 1.1E-06 | 2.9E-07 | | **1.4E-06** | 5.7E-03 | 1.8E-03 | | **7.5E-03** | Developmental | Developmental |
| Surface Water | Surface Water | KWL | **Metals** | | | | | | | | | | |
| | | | CHROMIUM | | 1.1E-06 | | **1.1E-06** | | 1.4E-03 | | **1.4E-03** | None Observed | Respiratory |
| **Exposure Point Total - KWL** | | | | 2.2E-05 | 3.5E-06 | 1.7E-09 | **3E-05** | 1.1E+00 | 6.9E-02 | 9.1E-04 | **1E+00** | | |

**Table 10.4**
**Risk Assessment Summary**
**Reasonable Maximum Exposure**
**Swimmer - Adult**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Sediment | Sediment | SL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 1.2E-06 | 7.1E-07 | | **1.9E-06** | 7.1E-03 | 4.3E-03 | | **1.1E-02** | Skin | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 2.0E-06 | 3.1E-06 | | **5.0E-06** | 1.8E-02 | 2.8E-02 | | **4.5E-02** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 3.9E-07 | 6.2E-07 | | **1.0E-06** | NA | NA | | **NA** | NA | NA |
| | | | **TICs** | | | | | | | | | | |
| | | | BENZO[J]FLUORANTHENE | 1.9E-06 | 3.0E-06 | | **4.9E-06** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | SL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 2.8E-06 | 7.0E-07 | | **3.5E-06** | 1.7E-02 | 4.2E-03 | | **2.1E-02** | Skin | Respiratory |
| | | | CHROMIUM | 3.0E-07 | 3.1E-06 | | **3.4E-06** | 5.4E-04 | 5.5E-03 | | **6.0E-03** | None Observed | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 4.7E-08 | 2.6E-05 | | **2.6E-05** | 4.3E-04 | 2.3E-01 | | **2.3E-01** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 3.2E-09 | 1.0E-06 | | **1.0E-06** | NA | NA | | **NA** | NA | NA |
| | | | BIS(2-ETHYLHEXYL) PHTHALATE | 5.9E-09 | 1.0E-05 | | **1.0E-05** | 5.7E-05 | 9.7E-02 | | **9.7E-02** | Hepatic | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 1.6E-08 | 8.4E-06 | | **8.5E-06** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 2.1E-09 | 1.4E-06 | | **1.4E-06** | NA | NA | | **NA** | NA | NA |
| **Exposure Point Total - SL** | | | | 9.2E-06 | 6.0E-05 | 0.0E+00 | **7E-05** | 1.4E-01 | 5.4E-01 | 0.0E+00 | **7E-01** | | |
| Sediment | Sediment | BWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 3.4E-05 | 2.1E-05 | | **5.5E-05** | 2.0E-01 | 1.2E-01 | | **3.3E-01** | Skin | Respiratory |
| Surface Water | Surface Water | BWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 1.1E-05 | 2.7E-06 | | **1.4E-05** | 6.5E-02 | 1.6E-02 | | **8.2E-02** | Skin | Respiratory |
| | | | CHROMIUM | 5.3E-07 | 5.4E-06 | | **5.9E-06** | 9.5E-04 | 9.6E-03 | | **1.1E-02** | None Observed | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 8.1E-09 | 4.4E-06 | | **4.4E-06** | 7.2E-05 | 4.0E-02 | | **4.0E-02** | Developmental | Developmental |
| **Exposure Point Total - BWL** | | | | 4.6E-05 | 3.4E-05 | 0.0E+00 | **8E-05** | 4.5E-01 | 2.4E-01 | 0.0E+00 | **7E-01** | | |
| Sediment | Sediment | KWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 1.1E-05 | 6.4E-06 | | **1.7E-05** | 6.3E-02 | 3.8E-02 | | **1.0E-01** | Skin | Respiratory |
| Surface Water | Surface Water | KWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 5.9E-06 | 1.5E-06 | | **7.4E-06** | 3.6E-02 | 9.0E-03 | | **4.4E-02** | Skin | Respiratory |
| | | | CHROMIUM | 6.3E-07 | 6.4E-06 | | **7.0E-06** | 1.1E-03 | 1.1E-02 | | **1.3E-02** | None Observed | Respiratory |
| **Exposure Point Total - KWL** | | | | 1.8E-05 | 1.5E-05 | 0.0E+00 | **3E-05** | 5.5E-01 | 1.9E-01 | 0.0E+00 | **7E-01** | | |

**Table 10.5**
**Risk Assessment Summary**
**Reasonable Maximum Exposure**
**Swimmer - Adolescent**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Sediment | Sediment | SL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 8.2E-07 | 3.8E-07 | | **1.2E-06** | 1.3E-02 | 5.9E-03 | | **1.9E-02** | Skin | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 5.5E-07 | 6.6E-07 | | **1.2E-06** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 4.1E-06 | 4.9E-06 | | **9.0E-06** | 3.2E-02 | 3.8E-02 | | **7.0E-02** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 8.2E-07 | 9.9E-07 | | **1.8E-06** | NA | NA | | **NA** | NA | NA |
| | | | **TICs** | | | | | | | | | | |
| | | | BENZO[J]FLUORANTHENE | 1.3E-06 | 1.6E-06 | | **2.9E-06** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | SL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 1.6E-06 | 2.9E-07 | | **1.8E-06** | 2.4E-02 | 4.5E-03 | | **2.9E-02** | Skin | Respiratory |
| | | | CHROMIUM | 5.1E-07 | 3.8E-06 | | **4.3E-06** | 7.9E-04 | 5.9E-03 | | **6.7E-03** | None Observed | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 7.9E-08 | 3.4E-05 | | **3.5E-05** | 6.2E-04 | 2.7E-01 | | **2.7E-01** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 5.3E-09 | 1.3E-06 | | **1.3E-06** | NA | NA | | **NA** | NA | NA |
| | | | BIS(2-ETHYLHEXYL) PHTHALATE | 3.3E-09 | 4.5E-06 | | **4.5E-06** | 8.3E-05 | 1.1E-01 | | **1.1E-01** | Hepatic | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 2.7E-08 | 1.1E-05 | | **1.1E-05** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 3.5E-09 | 1.8E-06 | | **1.9E-06** | NA | NA | | **NA** | NA | NA |
| **Exposure Point Total - SL** | | | | 1.0E-05 | 6.7E-05 | 0.0E+00 | **8E-05** | 2.3E-01 | 6.1E-01 | 0.0E+00 | **8E-01** | | |
| Sediment | Sediment | BWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 2.4E-05 | 1.1E-05 | | **3.5E-05** | 3.7E-01 | 1.7E-01 | | **5.4E-01** | Skin | Respiratory |
| | | | CHROMIUM | 1.1E-06 | NA | | **1.1E-06** | 1.7E-03 | NA | | **1.7E-03** | None Observed | Respiratory |
| Surface Water | Surface Water | BWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 6.1E-06 | 1.1E-06 | | **7.2E-06** | 9.4E-02 | 1.8E-02 | | **1.1E-01** | Skin | Respiratory |
| | | | CHROMIUM | 8.9E-07 | 6.7E-06 | | **7.5E-06** | 1.4E-03 | 1.0E-02 | | **1.2E-02** | None Observed | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 1.3E-08 | 5.9E-06 | | **5.9E-06** | 1.0E-04 | 4.6E-02 | | **4.6E-02** | Developmental | Developmental |
| **Exposure Point Total - BWL** | | | | 3.2E-05 | 2.5E-05 | 0.0E+00 | **6E-05** | 7.5E-01 | 3.0E-01 | 0.0E+00 | **1E+00** | | |
| Sediment | Sediment | KWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 7.3E-06 | 3.4E-06 | | **1.1E-05** | 1.1E-01 | 5.3E-02 | | **1.7E-01** | Skin | Respiratory |
| | | | CHROMIUM | 1.2E-06 | NA | | **1.2E-06** | 1.9E-03 | NA | | **1.9E-03** | None Observed | Respiratory |
| Surface Water | Surface Water | KWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 3.3E-06 | 6.2E-07 | | **3.9E-06** | 5.1E-02 | 9.7E-03 | | **6.1E-02** | Skin | Respiratory |
| | | | CHROMIUM | 1.1E-06 | 7.9E-06 | | **9.0E-06** | 1.6E-03 | 1.2E-02 | | **1.4E-02** | None Observed | Respiratory |
| **Exposure Point Total - KWL** | | | | 1.3E-05 | 1.3E-05 | 0.0E+00 | **3E-05** | 8.5E-01 | 2.1E-01 | 0.0E+00 | **1E+00** | | |

**Table 10.6**
**Risk Assessment Summary**
**Reasonable Maximum Exposure**
**Swimmer - Child**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Sediment | Sediment | SL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 2.9E-06 | 3.5E-07 | | **3.3E-06** | 7.6E-02 | 9.0E-03 | | **8.4E-02** | Skin | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 4.7E-06 | 1.3E-06 | | **6.0E-06** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 3.5E-05 | 9.6E-06 | | **4.5E-05** | 1.9E-01 | 5.8E-02 | | **2.5E-01** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 7.1E-06 | 1.9E-06 | | **9.0E-06** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 3.6E-06 | 9.8E-07 | | **4.6E-06** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 9.7E-07 | 2.7E-07 | | **1.2E-06** | NA | NA | | **NA** | NA | NA |
| | | | **TICs** | | | | | | | | | | |
| | | | BENZO[J]FLUORANTHENE | 4.7E-06 | 1.5E-06 | | **6.2E-06** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | SL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 6.3E-06 | 3.4E-07 | | **6.7E-06** | 1.6E-01 | 8.7E-03 | | **1.7E-01** | Skin | Respiratory |
| | | | CHROMIUM | 5.0E-06 | 8.6E-06 | | **1.4E-05** | 5.4E-03 | 1.1E-02 | | **1.7E-02** | None Observed | Respiratory |
| | | | MANGANESE | NA | NA | | **NA** | 2.5E-01 | 3.3E-01 | | **5.8E-01** | Nervous system | Nervous system |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 2.6E-08 | 1.5E-06 | | **1.5E-06** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 7.9E-07 | 6.7E-05 | | **6.7E-05** | 4.2E-03 | 4.4E-01 | | **4.5E-01** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 5.2E-08 | 2.6E-06 | | **2.6E-06** | NA | NA | | **NA** | NA | NA |
| | | | BIS(2-ETHYLHEXYL) PHTHALATE | 1.4E-08 | 4.4E-06 | | **4.4E-06** | 5.6E-04 | 1.8E-01 | | **1.8E-01** | Hepatic | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 2.7E-07 | 2.2E-05 | | **2.2E-05** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 3.5E-08 | 3.6E-06 | | **3.6E-06** | NA | NA | | **NA** | NA | NA |
| **Exposure Point Total - SL** | | | | 7.3E-05 | 1.3E-04 | 0.0E+00 | **2E-04** | 1.4E+00 | 1.1E+00 | 0.0E+00 | **2E+00** | | |
| Sediment | Sediment | BWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 8.4E-05 | 1.0E-05 | | **9.4E-05** | 2.2E+00 | 2.6E-01 | | **2.4E+00** | Skin | Respiratory |
| | | | CHROMIUM | 9.3E-06 | NA | | **9.3E-06** | 9.9E-03 | NA | | **9.9E-03** | None Observed | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 3.3E-06 | 9.0E-07 | | **4.2E-06** | 1.8E-02 | 5.4E-03 | | **2.3E-02** | Developmental | Developmental |
| Surface Water | Surface Water | BWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 2.5E-05 | 1.3E-06 | | **2.6E-05** | 6.4E-01 | 3.4E-02 | | **6.8E-01** | Skin | Respiratory |
| | | | CHROMIUM | 8.8E-06 | 1.5E-05 | | **2.4E-05** | 9.4E-03 | 2.0E-02 | | **2.9E-02** | None Observed | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 1.3E-07 | 1.1E-05 | | **1.1E-05** | 7.1E-04 | 7.5E-02 | | **7.6E-02** | Developmental | Developmental |
| **Exposure Point Total - BWL** | | | | 1.3E-04 | 3.9E-05 | 0.0E+00 | **2E-04** | 4.6E+00 | 5.0E-01 | 0.0E+00 | **5E+00** | | |
| | | | | | | | | **Total Organ HI (BWL)** | | | | | |
| | | | | | | | | Skin | | | 4E+00 | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Sediment | Sediment | KWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 2.6E-05 | 3.1E-06 | | **2.9E-05** | 6.8E-01 | 8.0E-02 | | **7.6E-01** | Skin | Respiratory |
| | | | CHROMIUM | 1.0E-05 | NA | | **1.0E-05** | 1.1E-02 | NA | | **1.1E-02** | None Observed | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 2.6E-06 | 7.0E-07 | | **3.3E-06** | 1.4E-02 | 4.2E-03 | | **1.8E-02** | Developmental | Developmental |
| Surface Water | Surface Water | KWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 1.4E-05 | 7.2E-07 | | **1.4E-05** | 3.5E-01 | 1.9E-02 | | **3.7E-01** | Skin | Respiratory |
| | | | CHROMIUM | 1.0E-05 | 1.8E-05 | | **2.8E-05** | 1.1E-02 | 2.4E-02 | | **3.5E-02** | None Observed | Respiratory |
| | | | THALLIUM | NA | NA | | **NA** | 3.7E+00 | 1.9E-01 | | **3.8E+00** | Skin | NA |
| **Exposure Point Total - KWL** | | | | 6.4E-05 | 2.3E-05 | 0.0E+00 | **9E-05** | 5.6E+00 | 3.9E-01 | 0.0E+00 | **6E+00** | | |
| | | | | | | | | **Total Organ HI (KWL)** | | | | | |
| | | | | | | | | Skin | | | 5E+00 | | |

**Table 10.7**
**Risk Assessment Summary**
**Reasonable Maximum Exposure**
**Angler - Adult**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | Non-carcinogenic Hazard Quotient | Target Organ |
|---|---|---|---|---|---|---|
| | | | | Ingestion | Ingestion | RfD |
| Fish | Tissue | KWL | **Metals** | | | |
| | | | ARSENIC | 1.8E-06 | 1.1E-02 | Skin |
| | | | CHROMIUM | 1.3E-05 | 2.3E-02 | None Observed |
| | | | **PEST/PCB** | | | |
| | | | AROCLOR-1254 | 1.3E-05 | 8.7E-01 | Immunological |
| | | | AROCLOR-1260 | 5.4E-06 | 3.6E-01 | Immunological |
| **Exposure Point Total - KWL** | | | | **3.4E-05** | **1.4E+00** | |
| | | | | | **Total Organ HI (KWL)** | |
| | | | | | Immunological | 1E+00 |

**Table 10.8**
**Risk Assessment Summary**
**Reasonable Maximum Exposure**
**Angler - Adolescent**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | Non-carcinogenic Hazard Quotient | Target Organ |
|---|---|---|---|---|---|---|
| | | | | Ingestion | Ingestion | RfD |
| Fish | Tissue | KWL | **Metals** | | | |
| | | | CHROMIUM | 1.8E-05 | 2.8E-02 | None Observed |
| | | | **PEST/PCB** | | | |
| | | | AROCLOR-1254 | 5.9E-06 | 1.0E+00 | Immunological |
| | | | AROCLOR-1260 | 2.4E-06 | 4.3E-01 | Immunological |
| **Exposure Point Total - KWL** | | | | **2.7E-05** | **1.7E+00** | |
| | | | | | **Total Organ HI (KWL)** | |
| | | | | | Immunological | 1E+00 |

**Table 10.9**
**Risk Assessment Summary**
**Reasonable Maximum Exposure**
**Angler - Child**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | Non-carcinogenic Hazard Quotient | Target Organ |
|---|---|---|---|---|---|---|
| | | | | Ingestion | Ingestion | RfD |
| Fish | Tissue | KWL | **Metals** | | | |
| | | | CHROMIUM | 4.0E-05 | 4.3E-02 | None Observed |
| | | | **PEST/PCB** | | | |
| | | | AROCLOR-1254 | 5.5E-06 | 1.6E+00 | Immunological |
| | | | AROCLOR-1260 | 2.3E-06 | 6.7E-01 | Immunological |
| **Exposure Point Total - KWL** | | | | **4.9E-05** | **2.6E+00** | |
| | | | | | **Total Organ HI (KWL)** | |
| | | | | | Immunological | 2E+00 |

**Table 11**

**Summary of Total Cancer Risks and Non-cancer Hazards by Exposure Area**

| Exposure Area | Adult Recreator | | Adolescent Recreator | | Child Recreator | | Adult Swimmer | | Adolescent Swimmer | | Child Swimmer | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard |
| SL | 1E-05 | 0.08 | 1E-05 | 0.1 | 4E-05 | 0.4 | 7E-05 | 0.7 | 8E-05 | 0.8 | **2E-04** | **2** |
| BWL | 5E-05 | 0.4 | 3E-05 | 0.7 | 1E-04 | **3** | 8E-05 | 0.7 | 6E-05 | 1 | **2E-04** | **5** |
| HC | 1E-04 | 1 | 1E-04 | **2** | **4E-04** | **10** | NA | NA | NA | NA | NA | NA |
| KWL | 1E-05 | 0.1 | 7E-06 | 0.2 | 3E-05 | 1 | 3E-05 | 0.7 | 3E-05 | 1 | 9E-05 | **6** |

| Exposure Area | Adult Angler | | Adolescent Angler | | Child Angler | |
|---|---|---|---|---|---|---|
| | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard |
| KWL | 3E-05 | 1 | 3E-05 | **2** | 5E-05 | **3** |

Notes:

**BOLD** – Cancer Risk >1 x $10^{-4}$ or Hazard Index > 1.

NA – Receptor not evaluated in this exposure area.

**Table 12**
**Risk Summary Detail**

| Receptor/Exposure Pathway | SL | | | BWL | | | HC | | | KWL | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Cancer Risk** | **Cancer Risk** | **Percent Contribution** | **Major Contributor** | **Cancer Risk** | **Percent Contribution** | **Major Contributor** | **Cancer Risk** | **Percent Contribution** | **Major Contributor** | **Cancer Risk** | **Percent Contribution** | **Major Contributor** |
| **Adult Recreator** | | | | | | | | | | | | |
| Incidental Ingestion of Soil | NA | | | 2.0E-05 | 41% | ARSENIC (99%) | 8.9E-05 | 60% | ARSENIC (96%) | 1.6E-06 | 16% | ARSENIC (93%) |
| Dermal Contact with Soil | NA | | | 4.2E-06 | 9% | ARSENIC (99.7%) | 1.8E-05 | 12% | ARSENIC (98%) | 3.2E-07 | 3% | ARSENIC (95%) |
| Inhalation of Particulates | NA | | | 1.1E-08 | <1% | ARSENIC (73%) | 9.0E-08 | <1% | CHROMIUM (47%) | 1.9E-09 | <1% | CHROMIUM (64%) |
| Incidental Ingestion of Sediment | 2.5E-06 | 25% | BENZO(A)PYRENE (32%) | 1.5E-05 | 30% | ARSENIC (98%) | 2.0E-05 | 14% | ARSENIC (97%) | 4.8E-06 | 48% | ARSENIC (93%) |
| Dermal Contact with Sediment | 3.5E-06 | 34% | BENZO(A)PYRENE (37%) | 8.8E-06 | 18% | ARSENIC (98%) | 1.2E-05 | 8% | ARSENIC (99%) | 2.8E-06 | 29% | ARSENIC (94%) |
| Dermal Contact with Surface Water | 4.3E-06 | 41% | BENZO(A)PYRENE (52%) | 8.3E-07 | 2% | BENZO(A)PYRENE (45%) | 8.4E-06 | 6% | CHROMIUM (94%) | 4.4E-07 | 4% | CHROMIUM (81%) |
| **Total Risk:** | **1E-05** | | | **5E-05** | | | **1E-04** | | | **1E-05** | | |
| **Adolescent Recreator** | | | | | | | | | | | | |
| Incidental Ingestion of Soil | NA | | | 1.4E-05 | 43% | ARSENIC (97%) | 6.7E-05 | 60% | ARSENIC (89%) | 1.2E-06 | 17% | ARSENIC (80%) |
| Dermal Contact with Soil | NA | | | 2.2E-06 | 7% | ARSENIC (99%) | 1.0E-05 | 9% | ARSENIC (96%) | 1.9E-07 | 3% | ARSENIC (86%) |
| Inhalation of Particulates | NA | | | 6.1E-09 | <1% | CHROMIUM (50%) | 6.8E-08 | <1% | CHROMIUM (72%) | 1.7E-09 | <1% | CHROMIUM (84%) |
| Incidental Ingestion of Sediment | 3.5E-06 | 26% | BENZO(A)PYRENE (49%) | 1.1E-05 | 32% | ARSENIC (93%) | 1.5E-05 | 13% | ARSENIC (90%) | 3.8E-06 | 50% | ARSENIC (82%) |
| Dermal Contact with Sediment | 3.9E-06 | 29% | BENZO(A)PYRENE (53%) | 4.9E-06 | 15% | ARSENIC (94%) | 6.4E-06 | 6% | ARSENIC (97%) | 1.7E-06 | 22% | ARSENIC (86%) |
| Dermal Contact with Surface Water | 5.9E-06 | 44% | BENZO(A)PYRENE (60%) | 1.2E-06 | 4% | BENZO(A)PYRENE (52%) | 1.3E-05 | 12% | CHROMIUM (98%) | 6.2E-07 | 8% | CHROMIUM (93%) |
| **Total Risk:** | **1E-05** | | | **3E-05** | | | **1E-04** | | | **7E-06** | | |
| **Child Recreator** | | | | | | | | | | | | |
| Incidental Ingestion of Soil | NA | | | 5.2E-05 | 49% | ARSENIC (93%) | 2.7E-04 | 70% | ARSENIC (77%) | 5.7E-06 | 22% | ARSENIC (63%) |
| Dermal Contact with Soil | NA | | | 5.9E-06 | 6% | ARSENIC (98%) | 2.7E-05 | 7% | ARSENIC (91%) | 5.7E-07 | 2% | ARSENIC (75%) |
| Inhalation of Particulates | NA | | | 5.1E-09 | <1% | CHROMIUM (64%) | 6.4E-08 | <1% | CHROMIUM (82%) | 1.7E-09 | <1% | CHROMIUM (90%) |
| Incidental Ingestion of Sediment | 2.5E-05 | 59% | BENZO(A)PYRENE (58%) | 4.1E-05 | 39% | ARSENIC (85%) | 6.0E-05 | 15% | ARSENIC (80%) | 1.7E-05 | 65% | ARSENIC (65%) |
| Dermal Contact with Sediment | 6.7E-06 | 16% | BENZO(A)PYRENE (60%) | 4.8E-06 | 4% | ARSENIC (88%) | 6.0E-06 | 2% | ARSENIC (95%) | 1.7E-06 | 7% | ARSENIC (75%) |
| Dermal Contact with Surface Water | 1.1E-05 | 26% | BENZO(A)PYRENE (63%) | 2.2E-06 | 2% | BENZO(A)PYRENE (54%) | 2.5E-05 | 6% | CHROMIUM (99%) | 1.2E-06 | 4% | CHROMIUM (96%) |
| **Total Risk:** | **4E-05** | | | **1E-04** | | | **4E-04** | | | **3E-05** | | |
| **Adult Swimmer** | | | | | | | | | | | | |
| Incidental Ingestion of Sediment | 6.1E-06 | 9% | BENZO(A)PYRENE (32%) | 3.5E-05 | 44% | ARSENIC (98%) | NA | | | 1.1E-05 | 35% | ARSENIC (93%) |
| Dermal Contact with Sediment | 8.3E-06 | 12% | BENZO(A)PYRENE (37%) | 2.1E-05 | 26% | ARSENIC (98%) | NA | | | 6.8E-06 | 21% | ARSENIC (94%) |
| Incidental Ingestion of Surface Water | 3.2E-06 | 5% | ARSENIC (88%) | 1.1E-05 | 14% | ARSENIC (95%) | NA | | | 6.6E-06 | 20% | ARSENIC (90%) |
| Dermal Contact with Surface Water | 5.1E-05 | 75% | BENZO(A)PYRENE (51%) | 1.3E-05 | 16% | CHROMIUM (43%) | NA | | | 7.9E-06 | 24% | CHROMIUM (81%) |
| **Total Risk:** | **7E-05** | | | **8E-05** | | | **NA** | | | **3E-05** | | |
| **Adolescent Swimmer** | | | | | | | | | | | | |
| Incidental Ingestion of Sediment | 8.3E-06 | 11% | BENZO(A)PYRENE (49%) | 2.5E-05 | 44% | ARSENIC (93%) | NA | | | 9.0E-06 | 35% | ARSENIC (82%) |
| Dermal Contact with Sediment | 9.2E-06 | 12% | BENZO(A)PYRENE (53%) | 1.2E-05 | 20% | ARSENIC (94%) | NA | | | 4.0E-06 | 15% | ARSENIC (86%) |
| Incidental Ingestion of Surface Water | 2.2E-06 | 3% | ARSENIC (71%) | 7.0E-06 | 12% | ARSENIC (87%) | NA | | | 4.4E-06 | 17% | ARSENIC (76%) |
| Dermal Contact with Surface Water | 5.8E-05 | 75% | BENZO(A)PYRENE (59%) | 1.4E-05 | 24% | CHROMIUM (49%) | NA | | | 8.5E-06 | 33% | CHROMIUM (93%) |
| **Total Risk:** | **8E-05** | | | **6E-05** | | | **NA** | | | **3E-05** | | |
| **Child Swimmer** | | | | | | | | | | | | |
| Incidental Ingestion of Sediment | 6.0E-05 | 30% | BENZO(A)PYRENE (58%) | 9.8E-05 | 57% | ARSENIC (85%) | NA | | | 4.0E-05 | 46% | ARSENIC (65%) |
| Dermal Contact with Sediment | 1.6E-05 | 8% | BENZO(A)PYRENE (60%) | 1.1E-05 | 7% | ARSENIC (88%) | NA | | | 4.1E-06 | 5% | ARSENIC (75%) |
| Incidental Ingestion of Surface Water | 1.3E-05 | 6% | ARSENIC (51%) | 3.4E-05 | 20% | ARSENIC (73%) | NA | | | 2.4E-05 | 28% | ARSENIC (56%) |
| Dermal Contact with Surface Water | 1.1E-04 | 55% | BENZO(A)PYRENE (61%) | 2.8E-05 | 16% | CHROMIUM (54%) | NA | | | 1.9E-05 | 21% | CHROMIUM (96%) |
| **Total Risk:** | **2E-04** | | | **2E-04** | | | **NA** | | | **9E-05** | | |
| **Adult Angler** | | | | | | | | | | | | |
| Ingestion of Fish | NA | | | NA | | | NA | | | 3.4E-05 | 100% | CHROMIUM (38%) |
| **Total Risk:** | **NA** | | | **NA** | | | **NA** | | | **3E-05** | | |
| **Adolescent Angler** | | | | | | | | | | | | |
| Ingestion of Fish | NA | | | NA | | | NA | | | 2.7E-05 | 100% | CHROMIUM (65%) |
| **Total Risk:** | **NA** | | | **NA** | | | **NA** | | | **3E-05** | | |
| **Child Angler** | | | | | | | | | | | | |
| Ingestion of Fish | NA | | | NA | | | NA | | | 4.9E-05 | 100% | CHROMIUM (82%) |
| **Total Risk:** | **NA** | | | **NA** | | | **NA** | | | **5E-05** | | |

| Receptor/Exposure Pathway | SL | | | BWL | | | HC | | | KWL | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Non-cancer Hazard | Non-cancer Hazard | Percent Contribution | Major Contributor | Non-cancer Hazard | Percent Contribution | Major Contributor | Non-cancer Hazard | Percent Contribution | Major Contributor | Non-cancer Hazard | Percent Contribution | Major Contributor |
| **Adult Recreator** | | | | | | | | | | | | |
| Incidental Ingestion of Soil | NA | | | 1.8E-01 | 46% | ARSENIC (67%) | 6.6E-01 | 57% | ARSENIC (77%) | 4.6E-02 | 35% | THALLIUM (49%) |
| Dermal Contact with Soil | NA | | | 2.5E-02 | 7% | ARSENIC (99%) | 1.1E-01 | 10% | ARSENIC (95%) | 1.9E-03 | 1% | ARSENIC (94%) |
| Inhalation of Particulates | NA | | | 1.7E-03 | <1% | CYANIDE (78%) | 1.1E-01 | 10% | CYANIDE (98%) | 9.1E-04 | <1% | CYANIDE (92%) |
| Incidental Ingestion of Sediment | 3.2E-02 | 38% | THALLIUM (41%) | 1.2E-01 | 31% | ARSENIC (72%) | 1.7E-01 | 15% | ARSENIC (69%) | 5.4E-02 | 41% | ARSENIC (49%) |
| Dermal Contact with Sediment | 1.4E-02 | 17% | BENZO(A)PYRENE (82%) | 5.5E-02 | 14% | ARSENIC (94%) | 7.3E-02 | 6% | ARSENIC (95%) | 1.9E-02 | 15% | ARSENIC (82%) |
| Dermal Contact with Surface Water | 3.8E-02 | 45% | BENZO(A)PYRENE (52%) | 7.4E-03 | 2% | BENZO(A)PYRENE (46%) | 2.6E-02 | 2% | CHROMIUM (54%) | 7.8E-03 | 6% | THALLIUM (67%) |
| **Total Hazard:** | **8E-02** | | | **4E-01** | | | **1E+00** | | | **1E-01** | | |
| **Adolescent Recreator** | | | | | | | | | | | | |
| Incidental Ingestion of Soil | NA | | | 3.2E-01 | 48% | ARSENIC (67%) | 1.2E+00 | 63% | ARSENIC (77%) | 8.3E-02 | 38% | THALLIUM (49%) |
| Dermal Contact with Soil | NA | | | 3.5E-02 | 5% | ARSENIC (99%) | 1.6E-01 | 8% | ARSENIC (95%) | 2.7E-03 | 1% | ARSENIC (94%) |
| Inhalation of Particulates | NA | | | 1.7E-03 | <1% | CYANIDE (78%) | 1.1E-01 | 6% | CYANIDE (98%) | 9.1E-04 | <1% | CYANIDE (92%) |
| Incidental Ingestion of Sediment | 5.7E-02 | 44% | THALLIUM (41%) | 2.2E-01 | 33% | ARSENIC (72%) | 3.0E-01 | 16% | ARSENIC (69%) | 9.7E-02 | 44% | ARSENIC (49%) |
| Dermal Contact with Sediment | 2.0E-02 | 15% | BENZO(A)PYRENE (82%) | 7.6E-02 | 12% | ARSENIC (94%) | 1.0E-01 | 5% | ARSENIC (95%) | 2.7E-02 | 12% | ARSENIC (82%) |
| Dermal Contact with Surface Water | 5.3E-02 | 41% | BENZO(A)PYRENE (52%) | 1.0E-02 | 2% | BENZO(A)PYRENE (46%) | 3.7E-02 | 2% | CHROMIUM (54%) | 1.1E-02 | 5% | THALLIUM (67%) |
| **Total Hazard:** | **1E-01** | | | **7E-01** | | | **2E+00** | | | **2E-01** | | |
| **Child Recreator** | | | | | | | | | | | | |
| Incidental Ingestion of Soil | NA | | | 1.9E+00 | 55% | ARSENIC (67%) | 7.1E+00 | 72% | ARSENIC (77%) | 4.9E-01 | 43% | THALLIUM (49%) |
| Dermal Contact with Soil | NA | | | 1.5E-01 | 4% | ARSENIC (99%) | 6.8E-01 | 7% | ARSENIC (95%) | 1.2E-02 | 1% | ARSENIC (94%) |
| Inhalation of Particulates | NA | | | 1.7E-03 | <1% | CYANIDE (78%) | 1.1E-01 | 1% | CYANIDE (98%) | 9.1E-04 | <1% | CYANIDE (92%) |
| Incidental Ingestion of Sediment | 3.4E-01 | 76% | THALLIUM (41%) | 1.3E+00 | 37% | ARSENIC (72%) | 1.8E+00 | 18% | ARSENIC (69%) | 5.7E-01 | 51% | ARSENIC (49%) |
| Dermal Contact with Sediment | 3.0E-02 | 7% | BENZO(A)PYRENE (82%) | 1.1E-01 | 3% | ARSENIC (94%) | 1.5E-01 | 2% | ARSENIC (95%) | 4.1E-02 | 4% | ARSENIC (82%) |
| Dermal Contact with Surface Water | 8.0E-02 | 18% | BENZO(A)PYRENE (52%) | 1.5E-02 | <1% | BENZO(A)PYRENE (46%) | 5.6E-02 | <1% | CHROMIUM (54%) | 1.6E-02 | 1% | THALLIUM (67%) |
| **Total Hazard:** | **4E-01** | | | **3E+00** | | | **1E+01** | | | **1E+00** | | |
| **Adult Swimmer** | | | | | | | | | | | | |
| Incidental Ingestion of Sediment | 7.6E-02 | 11% | THALLIUM (41%) | 2.8E-01 | 41% | ARSENIC (72%) | NA | | | 1.3E-01 | 17% | ARSENIC (49%) |
| Dermal Contact with Sediment | 3.4E-02 | 5% | BENZO(A)PYRENE (82%) | 1.3E-01 | 19% | ARSENIC (94%) | NA | | | 4.7E-02 | 6% | ARSENIC (82%) |
| Incidental Ingestion of Surface Water | 6.3E-02 | 9% | MANGANESE (40%) | 1.6E-01 | 23% | THALLIUM (49%) | NA | | | 4.2E-01 | 57% | THALLIUM (87%) |
| Dermal Contact with Surface Water | 5.0E-01 | 75% | BENZO(A)PYRENE (46%) | 1.1E-01 | 16% | BENZO(A)PYRENE (36%) | NA | | | 1.4E-01 | 19% | THALLIUM (67%) |
| **Total Hazard:** | **7E-01** | | | **7E-01** | | | **NA** | | | **7E-01** | | |
| **Adolescent Swimmer** | | | | | | | | | | | | |
| Incidental Ingestion of Sediment | 1.4E-01 | 16% | THALLIUM (41%) | 5.1E-01 | 49% | ARSENIC (72%) | NA | | | 2.3E-01 | 22% | ARSENIC (49%) |
| Dermal Contact with Sediment | 4.7E-02 | 6% | BENZO(A)PYRENE (82%) | 1.8E-01 | 17% | ARSENIC (94%) | NA | | | 6.5E-02 | 6% | ARSENIC (82%) |
| Incidental Ingestion of Surface Water | 9.0E-02 | 11% | MANGANESE (40%) | 2.3E-01 | 22% | THALLIUM (49%) | NA | | | 6.1E-01 | 58% | THALLIUM (87%) |
| Dermal Contact with Surface Water | 5.7E-01 | 67% | BENZO(A)PYRENE (47%) | 1.2E-01 | 12% | BENZO(A)PYRENE (38%) | NA | | | 1.5E-01 | 14% | THALLIUM (67%) |
| **Total Hazard:** | **8E-01** | | | **1E+00** | | | **NA** | | | **1E+00** | | |
| **Child Swimmer** | | | | | | | | | | | | |
| Incidental Ingestion of Sediment | 8.1E-01 | 33% | THALLIUM (41%) | 3.0E+00 | 59% | ARSENIC (72%) | NA | | | 1.4E+00 | 23% | ARSENIC (49%) |
| Dermal Contact with Sediment | 7.1E-02 | 3% | BENZO(A)PYRENE (82%) | 2.7E-01 | 5% | ARSENIC (94%) | NA | | | 9.8E-02 | 2% | ARSENIC (82%) |
| Incidental Ingestion of Surface Water | 6.2E-01 | 25% | MANGANESE (40%) | 1.6E+00 | 31% | THALLIUM (49%) | NA | | | 4.2E+00 | 70% | THALLIUM (87%) |
| Dermal Contact with Surface Water | 9.8E-01 | 40% | BENZO(A)PYRENE (45%) | 2.2E-01 | 4% | BENZO(A)PYRENE (34%) | NA | | | 2.9E-01 | 5% | THALLIUM (67%) |
| **Total Hazard:** | **2E+00** | | | **5E+00** | | | **NA** | | | **6E+00** | | |
| **Adult Angler** | | | | | | | | | | | | |
| Ingestion of Fish | NA | | | NA | | | NA | | | 1.4E+00 | 100% | AROCLOR-1254 (62%) |
| **Total Hazard:** | **NA** | | | **NA** | | | **NA** | | | **1E+00** | | |
| **Adolescent Angler** | | | | | | | | | | | | |
| Ingestion of Fish | NA | | | NA | | | NA | | | 1.7E+00 | 100% | AROCLOR-1254 (62%) |
| **Total Hazard:** | **NA** | | | **NA** | | | **NA** | | | **2E+00** | | |
| **Child Angler** | | | | | | | | | | | | |
| Ingestion of Fish | NA | | | NA | | | NA | | | 2.6E+00 | 100% | AROCLOR-1254 (62%) |
| **Total Hazard:** | **NA** | | | **NA** | | | **NA** | | | **3E+00** | | |

Note:

Major Contributor – COPC contributing majority of risk, by receptor & pathway (% contribution)

**Table 13**
**Risk Summary Detail by Media**

| Receptor/Exposure Media | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|
| **Cancer Risk** | **Cancer Risk** | **Percent Contribution** | **Cancer Risk** | **Percent Contribution** | **Cancer Risk** | **Percent Contribution** | **Cancer Risk** | **Percent Contribution** |
| **Adult Recreator** | | | | | | | | |
| Soil | NA | | 2.4E-05 | 50% | 1.1E-04 | 73% | 1.9E-06 | 19% |
| Sediment | 6.0E-06 | 59% | 2.3E-05 | 48% | 3.2E-05 | 22% | 7.6E-06 | 77% |
| Surface Water | 4.3E-06 | 41% | 8.3E-07 | 2% | 8.4E-06 | 6% | 4.4E-07 | 4% |
| **Total Risk:** | **1E-05** | | **5E-05** | | **1E-04** | | **1E-05** | |
| **Adolescent Recreator** | | | | | | | | |
| Soil | NA | | 1.6E-05 | 50% | 7.7E-05 | 69% | 1.4E-06 | 19% |
| Sediment | 7.3E-06 | 56% | 1.6E-05 | 47% | 2.1E-05 | 19% | 5.4E-06 | 73% |
| Surface Water | 5.9E-06 | 44% | 1.2E-06 | 4% | 1.3E-05 | 12% | 6.2E-07 | 8% |
| **Total Risk:** | **1E-05** | | **3E-05** | | **1E-04** | | **7E-06** | |
| **Child Recreator** | | | | | | | | |
| Soil | NA | | 5.8E-05 | 55% | 3.0E-04 | 77% | 6.2E-06 | 24% |
| Sediment | 3.2E-05 | 74% | 4.6E-05 | 43% | 6.6E-05 | 17% | 1.9E-05 | 72% |
| Surface Water | 1.1E-05 | 26% | 2.2E-06 | 2% | 2.5E-05 | 6% | 1.2E-06 | 4% |
| **Total Risk:** | **4E-05** | | **1E-04** | | **4E-04** | | **3E-05** | |
| **Adult Swimmer** | | | | | | | | |
| Sediment | 1.4E-05 | 21% | 5.6E-05 | 70% | NA | | 1.8E-05 | 56% |
| Surface Water | 5.4E-05 | 79% | 2.4E-05 | 30% | NA | | 1.4E-05 | 44% |
| **Total Risk:** | **7E-05** | | **8E-05** | | **NA** | | **3E-05** | |
| **Adolescent Swimmer** | | | | | | | | |
| Sediment | 1.8E-05 | 23% | 3.7E-05 | 64% | NA | | 1.3E-05 | 50% |
| Surface Water | 6.0E-05 | 77% | 2.1E-05 | 36% | NA | | 1.3E-05 | 50% |
| **Total Risk:** | **8E-05** | | **6E-05** | | **NA** | | **3E-05** | |
| **Child Swimmer** | | | | | | | | |
| Sediment | 7.6E-05 | 39% | 1.1E-04 | 64% | NA | | 4.4E-05 | 51% |
| Surface Water | 1.2E-04 | 61% | 6.1E-05 | 36% | NA | | 4.3E-05 | 49% |
| **Total Risk:** | **2E-04** | | **2E-04** | | **NA** | | **9E-05** | |

| Receptor/Exposure Media | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|
| Non-cancer Hazard | Non-cancer Hazard | Percent Contribution | Non-cancer Hazard | Percent Contribution | Non-cancer Hazard | Percent Contribution | Non-cancer Hazard | Percent Contribution |
| **Adult Recreator** | | | | | | | | |
| Soil | NA | | 2.0E-01 | 53% | 8.9E-01 | 77% | 4.9E-02 | 38% |
| Sediment | 4.6E-02 | 55% | 1.7E-01 | 45% | 2.4E-01 | 21% | 7.3E-02 | 56% |
| Surface Water | 3.8E-02 | 45% | 7.4E-03 | 2% | 2.6E-02 | 2% | 7.8E-03 | 6% |
| **Total Hazard:** | **8E-02** | | **4E-01** | | **1E+00** | | **1E-01** | |
| **Adolescent Recreator** | | | | | | | | |
| Soil | NA | | 3.5E-01 | 54% | 1.5E+00 | 77% | 8.7E-02 | 39% |
| Sediment | 7.7E-02 | 59% | 2.9E-01 | 44% | 4.1E-01 | 21% | 1.2E-01 | 56% |
| Surface Water | 5.3E-02 | 41% | 1.0E-02 | 2% | 3.7E-02 | 2% | 1.1E-02 | 5% |
| **Total Hazard:** | **1E-01** | | **7E-01** | | **2E+00** | | **2E-01** | |
| **Child Recreator** | | | | | | | | |
| Soil | NA | | 2.0E+00 | 59% | 7.9E+00 | 80% | 5.1E-01 | 44% |
| Sediment | 3.7E-01 | 82% | 1.4E+00 | 40% | 1.9E+00 | 20% | 6.2E-01 | 54% |
| Surface Water | 8.0E-02 | 18% | 1.5E-02 | <1% | 5.6E-02 | <1% | 1.6E-02 | 1% |
| **Total Hazard:** | **4E-01** | | **3E+00** | | **1E+01** | | **1E+00** | |
| **Adult Swimmer** | | | | | | | | |
| Sediment | 1.1E-01 | 16% | 4.1E-01 | 60% | NA | | 1.8E-01 | 24% |
| Surface Water | 5.7E-01 | 84% | 2.7E-01 | 40% | NA | | 5.6E-01 | 76% |
| **Total Hazard:** | **7E-01** | | **7E-01** | | **NA** | | **7E-01** | |
| **Adolescent Swimmer** | | | | | | | | |
| Sediment | 1.8E-01 | 22% | 6.9E-01 | 66% | NA | | 3.0E-01 | 28% |
| Surface Water | 6.6E-01 | 78% | 3.5E-01 | 34% | NA | | 7.6E-01 | 72% |
| **Total Hazard:** | **8E-01** | | **1E+00** | | **NA** | | **1E+00** | |
| **Child Swimmer** | | | | | | | | |
| Sediment | 8.8E-01 | 35% | 3.3E+00 | 65% | NA | | 1.5E+00 | 25% |
| Surface Water | 1.6E+00 | 65% | 1.8E+00 | 35% | NA | | 4.5E+00 | 75% |
| **Total Hazard:** | **2E+00** | | **5E+00** | | **NA** | | **6E+00** | |

Note:

NA – The medium was not evaluated in that exposure area.

**Table 14.1**

**Cancer Risk and Percentage Contribution by Medium for Each Receptor and Exposure Area**

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution |
| Adult Recreator | Soil | **Metals** | | | | | | | | |
| | | ALUMINUM | | | NA | NA | NA | NA | NA | NA |
| | | ANTIMONY | | | NA | NA | NA | NA | NA | NA |
| | | ARSENIC | | | 2.4E-05 | **99%** | 1.0E-04 | **96%** | 1.8E-06 | **93%** |
| | | BARIUM | | | | | NA | NA | | |
| | | CADMIUM | | | 6.5E-11 | <1% | 8.2E-11 | <1% | | |
| | | CHROMIUM | | | 1.9E-07 | <1% | 3.1E-06 | 3% | 8.9E-08 | 5% |
| | | COBALT | | | 1.5E-10 | <1% | 8.9E-10 | <1% | 1.2E-10 | <1% |
| | | COPPER | | | | | NA | NA | | |
| | | CYANIDE | | | NA | NA | NA | NA | NA | NA |
| | | IRON | | | NA | NA | NA | NA | NA | NA |
| | | LEAD | | | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | | | | | NA | NA | | |
| | | MERCURY | | | | | NA | NA | | |
| | | NICKEL | | | | | 5.6E-11 | <1% | | |
| | | THALLIUM | | | NA | NA | NA | NA | NA | NA |
| | | VANADIUM | | | NA | NA | NA | NA | | |
| | | ZINC | | | | | NA | NA | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | | | | | 3.5E-08 | <1% | | |
| | | AROCLOR-1260 | | | | | 1.0E-07 | <1% | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | | | | | 4.8E-08 | <1% | | |
| | | BENZO(A)PYRENE | | | 4.0E-08 | <1% | 5.2E-07 | <1% | 3.8E-08 | 2% |
| | | BENZO(B)FLUORANTHENE | | | | | 6.0E-08 | <1% | 7.6E-09 | <1% |
| | | BENZO(K)FLUORANTHENE | | | | | 5.5E-09 | <1% | | |
| | | DIBENZO(A,H)ANTHRACENE | | | | | 8.7E-08 | <1% | | |
| | | INDENO(1,2,3-CD)PYRENE | | | | | 2.3E-08 | <1% | | |
| | | NAPHTHALENE | | | | | 7.8E-09 | <1% | | |
| | | **Total Risks - Soil** | **NA** | | **2.4E-05** | | **1.1E-04** | | **1.9E-06** | |
| Adult Recreator | Sediment | **Metals** | | | | | | | | |
| | | ALUMINUM | NA | NA | NA | NA | NA | NA | NA | NA |
| | | ANTIMONY | NA | NA | NA | NA | NA | NA | NA | NA |
| | | ARSENIC | 7.9E-07 | **13%** | 2.3E-05 | **98%** | 3.1E-05 | **97%** | 7.1E-06 | **93%** |
| | | BARIUM | | | | | NA | NA | | |
| | | CADMIUM | | | NA | NA | NA | NA | NA | NA |
| | | CHROMIUM | 2.2E-08 | <1% | 2.2E-07 | <1% | 6.2E-07 | 2% | 2.4E-07 | 3% |
| | | COBALT | NA | NA | NA | NA | NA | NA | NA | NA |
| | | COPPER | NA | NA | NA | NA | NA | NA | NA | NA |
| | | CYANIDE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | IRON | NA | NA | NA | NA | NA | NA | NA | NA |
| | | LEAD | NA | NA | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | NICKEL | | | | | NA | NA | NA | NA |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution |
| Adult Recreator | Sediment | THALLIUM | NA | NA | | | NA | NA | NA | NA |
| | | VANADIUM | | | NA | NA | NA | NA | NA | NA |
| | | ZINC | | | NA | NA | NA | NA | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | 2.0E-08 | <1% | 2.4E-08 | <1% | 4.1E-08 | <1% | 4.9E-08 | <1% |
| | | AROCLOR-1260 | | | | | 1.7E-08 | <1% | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | 2.8E-07 | 5% | 1.9E-08 | <1% | 1.0E-08 | <1% | 1.6E-08 | <1% |
| | | BENZO(A)PYRENE | 2.1E-06 | **35%** | 2.0E-07 | <1% | 1.0E-07 | <1% | 1.5E-07 | 2% |
| | | BENZO(B)FLUORANTHENE | 4.2E-07 | **7%** | 2.9E-08 | <1% | 1.4E-08 | <1% | 2.0E-08 | <1% |
| | | BENZO(K)FLUORANTHENE | 9.0E-09 | <1% | 2.8E-09 | <1% | | | 1.7E-09 | <1% |
| | | CHRYSENE | 4.3E-09 | <1% | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | 2.2E-07 | 4% | 4.1E-08 | <1% | 2.7E-08 | <1% | 2.3E-08 | <1% |
| | | INDENO(1,2,3-CD)PYRENE | 5.8E-08 | <1% | 1.1E-08 | <1% | 5.6E-09 | <1% | 6.0E-09 | <1% |
| | | NAPHTHALENE | | | NA | NA | | | | |
| | | **VOCs** | | | | | | | | |
| | | TRICHLOROETHYLENE (TCE) | | | 1.7E-10 | <1% | | | | |
| | | **TICs** | | | | | | | | |
| | | BENZO[J]FLUORANTHENE | 2.1E-06 | **34%** | | | | | | |
| | | **Total Risks - Sediment** | **6.0E-06** | | **2.3E-05** | | **3.2E-05** | | **7.6E-06** | |
| Adult Recreator | Surface Water | **Metals** | | | | | | | | |
| | | ALUMINUM | | | NA | NA | NA | NA | NA | NA |
| | | ANTIMONY | | | NA | NA | NA | NA | NA | NA |
| | | ARSENIC | 4.0E-08 | <1% | 1.5E-07 | **19%** | 5.5E-07 | **6%** | 8.5E-08 | **19%** |
| | | BARIUM | | | | | NA | NA | | |
| | | CADMIUM | | | NA | NA | NA | NA | | |
| | | CHROMIUM | 1.7E-07 | 4% | 3.0E-07 | **36%** | 7.9E-06 | **94%** | 3.6E-07 | **81%** |
| | | COBALT | NA | NA | NA | NA | NA | NA | NA | NA |
| | | COPPER | | | | | NA | NA | | |
| | | CYANIDE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | IRON | NA | NA | NA | NA | NA | NA | NA | NA |
| | | LEAD | | | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | MERCURY | | | | | NA | NA | | |
| | | THALLIUM | | | NA | NA | NA | NA | NA | NA |
| | | VANADIUM | | | NA | NA | NA | NA | | |
| | | ZINC | | | | | NA | NA | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | 4.9E-08 | 1% | | | | | | |
| | | BENZO(A)PYRENE | 2.2E-06 | **52%** | 3.8E-07 | **45%** | | | | |
| | | BENZO(B)FLUORANTHENE | 8.6E-08 | 2% | | | | | | |
| | | BIS(2-ETHYLHEXYL) PHTHALATE | 8.6E-07 | **20%** | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | 7.2E-07 | **17%** | | | | | | |
| | | INDENO(1,2,3-CD)PYRENE | 1.2E-07 | 3% | | | | | | |
| | | **Total Risks - Surface Water** | **4.3E-06** | | **8.3E-07** | | **8.4E-06** | | **4.4E-07** | |
| | | **Total Risks - Adult Recreator** | **1E-05** | | **5E-05** | | **1E-04** | | **1E-05** | |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution |
| Adolescent Recreator | Soil | **Metals** | | | | | | | | |
| | | ALUMINUM | | | NA | NA | NA | NA | NA | NA |
| | | ANTIMONY | | | NA | NA | NA | NA | NA | NA |
| | | ARSENIC | | | 1.6E-05 | **97%** | 6.9E-05 | **90%** | 1.2E-06 | **81%** |
| | | BARIUM | | | | | NA | NA | | |
| | | CADMIUM | | | 2.5E-11 | <1% | 3.2E-11 | <1% | | |
| | | CHROMIUM | | | 4.0E-07 | 2% | 6.4E-06 | **8%** | 1.8E-07 | **13%** |
| | | COBALT | | | 5.9E-11 | <1% | 3.4E-10 | <1% | 4.7E-11 | <1% |
| | | COPPER | | | | | NA | NA | | |
| | | CYANIDE | | | NA | NA | NA | NA | NA | NA |
| | | IRON | | | NA | NA | NA | NA | NA | NA |
| | | LEAD | | | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | | | | | NA | NA | | |
| | | MERCURY | | | | | NA | NA | | |
| | | NICKEL | | | | | 2.2E-11 | <1% | | |
| | | THALLIUM | | | NA | NA | NA | NA | NA | NA |
| | | VANADIUM | | | NA | NA | NA | NA | | |
| | | ZINC | | | | | NA | NA | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | | | | | 2.2E-08 | <1% | | |
| | | AROCLOR-1260 | | | | | 6.5E-08 | <1% | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | | | | | 9.1E-08 | <1% | | |
| | | BENZO(A)PYRENE | | | 7.6E-08 | <1% | 9.9E-07 | 1% | 7.2E-08 | 5% |
| | | BENZO(B)FLUORANTHENE | | | | | 1.1E-07 | <1% | 1.5E-08 | 1% |
| | | BENZO(K)FLUORANTHENE | | | | | 1.0E-08 | <1% | | |
| | | DIBENZO(A,H)ANTHRACENE | | | | | 1.7E-07 | <1% | | |
| | | INDENO(1,2,3-CD)PYRENE | | | | | 4.4E-08 | <1% | | |
| | | NAPHTHALENE | | | | | 3.0E-09 | <1% | | |
| | | **Total Risks - Soil** | **NA** | | **1.6E-05** | | **7.7E-05** | | **1.4E-06** | |
| Adolescent Recreator | Sediment | **Metals** | | | | | | | | |
| | | ALUMINUM | NA | NA | NA | NA | NA | NA | NA | NA |
| | | ANTIMONY | NA | NA | NA | NA | NA | NA | NA | NA |
| | | ARSENIC | 5.0E-07 | **7%** | 1.5E-05 | **94%** | 2.0E-05 | **93%** | 4.5E-06 | **83%** |
| | | BARIUM | | | | | NA | NA | | |
| | | CADMIUM | | | NA | NA | NA | NA | NA | NA |
| | | CHROMIUM | 4.7E-08 | <1% | 4.5E-07 | 3% | 1.3E-06 | **6%** | 5.0E-07 | **9%** |
| | | COBALT | NA | NA | NA | NA | NA | NA | NA | NA |
| | | COPPER | NA | NA | NA | NA | NA | NA | NA | NA |
| | | CYANIDE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | IRON | NA | NA | NA | NA | NA | NA | NA | NA |
| | | LEAD | NA | NA | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | NICKEL | | | | | NA | NA | NA | NA |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution |
| Adolescent Recreator | Sediment | THALLIUM | NA | NA | | | NA | NA | NA | NA |
| | | VANADIUM | | | NA | NA | NA | NA | NA | NA |
| | | ZINC | | | NA | NA | NA | NA | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | 1.2E-08 | <1% | 1.4E-08 | <1% | 2.4E-08 | <1% | 2.9E-08 | <1% |
| | | AROCLOR-1260 | | | | | 1.0E-08 | <1% | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | 5.1E-07 | **7%** | 3.5E-08 | <1% | 1.8E-08 | <1% | 2.9E-08 | <1% |
| | | BENZO(A)PYRENE | 3.8E-06 | **51%** | 3.5E-07 | 2% | 1.8E-07 | <1% | 2.8E-07 | **5%** |
| | | BENZO(B)FLUORANTHENE | 7.6E-07 | **10%** | 5.2E-08 | <1% | 2.4E-08 | <1% | 3.6E-08 | <1% |
| | | BENZO(K)FLUORANTHENE | 1.6E-08 | <1% | 5.0E-09 | <1% | | | 3.1E-09 | <1% |
| | | CHRYSENE | 7.6E-09 | <1% | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | 3.9E-07 | **5%** | 7.3E-08 | <1% | 4.9E-08 | <1% | 4.2E-08 | <1% |
| | | INDENO(1,2,3-CD)PYRENE | 1.0E-07 | 1% | 1.9E-08 | <1% | 1.0E-08 | <1% | 1.1E-08 | <1% |
| | | NAPHTHALENE | | | NA | NA | | | | |
| | | **VOCs** | | | | | | | | |
| | | TRICHLOROETHYLENE (TCE) | | | 1.7E-10 | <1% | | | | |
| | | **TICs** | | | | | | | | |
| | | BENZO[J]FLUORANTHENE | 1.2E-06 | **17%** | | | | | | |
| | | **Total Risks - Sediment** | **7.3E-06** | | **1.6E-05** | | **2.1E-05** | | **5.4E-06** | |
| Adolescent Recreator | Surface Water | **Metals** | | | | | | | | |
| | | ALUMINUM | | | NA | NA | NA | NA | NA | NA |
| | | ANTIMONY | | | NA | NA | NA | NA | NA | NA |
| | | ARSENIC | 2.1E-08 | <1% | 8.3E-08 | **7%** | 2.9E-07 | 2% | 4.5E-08 | **7%** |
| | | BARIUM | | | | | NA | NA | | |
| | | CADMIUM | | | NA | NA | NA | NA | | |
| | | CHROMIUM | 2.8E-07 | 5% | 4.8E-07 | **41%** | 1.3E-05 | **98%** | 5.8E-07 | **93%** |
| | | COBALT | NA | NA | NA | NA | NA | NA | NA | NA |
| | | COPPER | | | | | NA | NA | | |
| | | CYANIDE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | IRON | NA | NA | NA | NA | NA | NA | NA | NA |
| | | LEAD | | | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | MERCURY | | | | | NA | NA | | |
| | | THALLIUM | | | NA | NA | NA | NA | NA | NA |
| | | VANADIUM | | | NA | NA | NA | NA | | |
| | | ZINC | | | | | NA | NA | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | 7.9E-08 | 1% | | | | | | |
| | | BENZO(A)PYRENE | 3.5E-06 | **60%** | 6.0E-07 | **52%** | | | | |
| | | BENZO(B)FLUORANTHENE | 1.4E-07 | 2% | | | | | | |
| | | BIS(2-ETHYLHEXYL) PHTHALATE | 4.6E-07 | **8%** | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | 1.2E-06 | **20%** | | | | | | |
| | | INDENO(1,2,3-CD)PYRENE | 1.9E-07 | 3% | | | | | | |
| | | **Total Risks - Surface Water** | **5.9E-06** | | **1.2E-06** | | **1.3E-05** | | **6.2E-07** | |
| | | **Total Risks - Adolescent Recreator** | **1E-05** | | **3E-05** | | **1E-04** | | **7E-06** | |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution |
| Child Recreator | Soil | **Metals** | | | | | | | | |
| | | ALUMINUM | | | NA | NA | NA | NA | NA | NA |
| | | ANTIMONY | | | NA | NA | NA | NA | NA | NA |
| | | ARSENIC | | | 5.4E-05 | **93%** | 2.3E-04 | **78%** | 4.0E-06 | **64%** |
| | | BARIUM | | | | | NA | NA | | |
| | | CADMIUM | | | 1.5E-11 | <1% | 1.9E-11 | <1% | | |
| | | CHROMIUM | | | 3.5E-06 | **6%** | 5.5E-05 | **18%** | 1.6E-06 | **25%** |
| | | COBALT | | | 3.6E-11 | <1% | 2.1E-10 | <1% | 2.8E-11 | <1% |
| | | COPPER | | | | | NA | NA | | |
| | | CYANIDE | | | NA | NA | NA | NA | NA | NA |
| | | IRON | | | NA | NA | NA | NA | NA | NA |
| | | LEAD | | | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | | | | | NA | NA | | |
| | | MERCURY | | | | | NA | NA | | |
| | | NICKEL | | | | | 1.3E-11 | <1% | | |
| | | THALLIUM | | | NA | NA | NA | NA | NA | NA |
| | | VANADIUM | | | NA | NA | NA | NA | | |
| | | ZINC | | | | | NA | NA | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | | | | | 6.9E-08 | <1% | | |
| | | AROCLOR-1260 | | | | | 2.1E-07 | <1% | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | | | | | 7.0E-07 | <1% | | |
| | | BENZO(A)PYRENE | | | 5.9E-07 | 1% | 7.6E-06 | 3% | 5.5E-07 | **9%** |
| | | BENZO(B)FLUORANTHENE | | | | | 8.8E-07 | <1% | 1.1E-07 | 2% |
| | | BENZO(K)FLUORANTHENE | | | | | 8.1E-08 | <1% | | |
| | | DIBENZO(A,H)ANTHRACENE | | | | | 1.3E-06 | <1% | | |
| | | INDENO(1,2,3-CD)PYRENE | | | | | 3.4E-07 | <1% | | |
| | | NAPHTHALENE | | | | | 1.8E-09 | <1% | | |
| | | **Total Risks - Soil** | **NA** | | **5.8E-05** | | **3.0E-04** | | **6.2E-06** | |
| Child Recreator | Sediment | **Metals** | | | | | | | | |
| | | ALUMINUM | NA | NA | NA | NA | NA | NA | NA | NA |
| | | ANTIMONY | NA | NA | NA | NA | NA | NA | NA | NA |
| | | ARSENIC | 1.4E-06 | 4% | 3.9E-05 | **86%** | 5.3E-05 | **81%** | 1.2E-05 | **66%** |
| | | BARIUM | | | | | NA | NA | | |
| | | CADMIUM | | | NA | NA | NA | NA | NA | NA |
| | | CHROMIUM | 4.0E-07 | 1% | 3.9E-06 | **8%** | 1.1E-05 | **17%** | 4.3E-06 | **23%** |
| | | COBALT | NA | NA | NA | NA | NA | NA | NA | NA |
| | | COPPER | NA | NA | NA | NA | NA | NA | NA | NA |
| | | CYANIDE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | IRON | NA | NA | NA | NA | NA | NA | NA | NA |
| | | LEAD | NA | NA | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | NICKEL | | | | | NA | NA | NA | NA |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution |
| Child Recreator | Sediment | THALLIUM | NA | NA | | | NA | NA | NA | NA |
| | | VANADIUM | | | NA | NA | NA | NA | NA | NA |
| | | ZINC | | | NA | NA | NA | NA | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | 2.4E-08 | <1% | 2.9E-08 | <1% | 5.0E-08 | <1% | 6.0E-08 | <1% |
| | | AROCLOR-1260 | | | | | 2.1E-08 | <1% | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | 2.5E-06 | **8%** | 1.7E-07 | <1% | 9.1E-08 | <1% | 1.5E-07 | <1% |
| | | BENZO(A)PYRENE | 1.9E-05 | **59%** | 1.8E-06 | 4% | 8.9E-07 | 1% | 1.4E-06 | **7%** |
| | | BENZO(B)FLUORANTHENE | 3.8E-06 | **12%** | 2.6E-07 | <1% | 1.2E-07 | <1% | 1.8E-07 | <1% |
| | | BENZO(K)FLUORANTHENE | 8.0E-08 | <1% | 2.5E-08 | <1% | | | 1.5E-08 | <1% |
| | | CHRYSENE | 3.8E-08 | <1% | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | 1.9E-06 | **6%** | 3.6E-07 | <1% | 2.4E-07 | <1% | 2.1E-07 | 1% |
| | | INDENO(1,2,3-CD)PYRENE | 5.2E-07 | 2% | 9.5E-08 | <1% | 5.0E-08 | <1% | 5.3E-08 | <1% |
| | | NAPHTHALENE | | | NA | NA | | | | |
| | | **VOCs** | | | | | | | | |
| | | TRICHLOROETHYLENE (TCE) | | | 9.6E-10 | <1% | | | | |
| | | **TICs** | | | | | | | | |
| | | BENZO[J]FLUORANTHENE | 2.6E-06 | **8%** | | | | | | |
| | | **Total Risks - Sediment** | **3.2E-05** | | **4.6E-05** | | **6.6E-05** | | **1.9E-05** | |
| Child Recreator | Surface Water | **Metals** | | | | | | | | |
| | | ALUMINUM | | | NA | NA | NA | NA | NA | NA |
| | | ANTIMONY | | | NA | NA | NA | NA | NA | NA |
| | | ARSENIC | 1.9E-08 | <1% | 7.5E-08 | 3% | 2.6E-07 | 1% | 4.1E-08 | 4% |
| | | BARIUM | | | | | NA | NA | | |
| | | CADMIUM | | | NA | NA | NA | NA | | |
| | | CHROMIUM | 5.4E-07 | 5% | 9.5E-07 | **43%** | 2.5E-05 | **99%** | 1.1E-06 | **96%** |
| | | COBALT | NA | NA | NA | NA | NA | NA | NA | NA |
| | | COPPER | | | | | NA | NA | | |
| | | CYANIDE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | IRON | NA | NA | NA | NA | NA | NA | NA | NA |
| | | LEAD | | | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | MERCURY | | | | | NA | NA | | |
| | | THALLIUM | | | NA | NA | NA | NA | NA | NA |
| | | VANADIUM | | | NA | NA | NA | NA | | |
| | | ZINC | | | | | NA | NA | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | 1.5E-07 | 1% | | | | | | |
| | | BENZO(A)PYRENE | 6.9E-06 | **63%** | 1.2E-06 | **54%** | | | | |
| | | BENZO(B)FLUORANTHENE | 2.7E-07 | 2% | | | | | | |
| | | BIS(2-ETHYLHEXYL) PHTHALATE | 4.2E-07 | 4% | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | 2.2E-06 | **21%** | | | | | | |
| | | INDENO(1,2,3-CD)PYRENE | 3.7E-07 | 3% | | | | | | |
| | | **Total Risks - Surface Water** | **1.1E-05** | | **2.2E-06** | | **2.5E-05** | | **1.2E-06** | |
| | | **Total Risks - Child Recreator** | **4E-05** | | **1E-04** | | **4E-04** | | **3E-05** | |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution |
| Adult Swimmer | Sediment | **Metals** | | | | | | | | |
| | | ALUMINUM | NA | NA | NA | NA | | | NA | NA |
| | | ANTIMONY | NA | NA | NA | NA | | | NA | NA |
| | | ARSENIC | 1.9E-06 | **13%** | 5.5E-05 | **98%** | | | 1.7E-05 | **93%** |
| | | CADMIUM | | | NA | NA | | | NA | NA |
| | | CHROMIUM | 5.3E-08 | <1% | 5.2E-07 | <1% | | | 5.8E-07 | 3% |
| | | COBALT | NA | NA | NA | NA | | | NA | NA |
| | | COPPER | NA | NA | NA | NA | | | NA | NA |
| | | CYANIDE | NA | NA | NA | NA | | | NA | NA |
| | | IRON | NA | NA | NA | NA | | | NA | NA |
| | | LEAD | NA | NA | NA | NA | | | NA | NA |
| | | MANGANESE | NA | NA | NA | NA | | | NA | NA |
| | | NICKEL | | | | | | | NA | NA |
| | | THALLIUM | NA | NA | | | | | NA | NA |
| | | VANADIUM | | | NA | NA | | | NA | NA |
| | | ZINC | | | NA | NA | | | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | 4.7E-08 | <1% | 5.8E-08 | <1% | | | 1.2E-07 | <1% |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | 6.8E-07 | 5% | 4.6E-08 | <1% | | | 3.9E-08 | <1% |
| | | BENZO(A)PYRENE | 5.0E-06 | **35%** | 4.7E-07 | <1% | | | 3.7E-07 | 2% |
| | | BENZO(B)FLUORANTHENE | 1.0E-06 | **7%** | 6.9E-08 | <1% | | | 4.8E-08 | <1% |
| | | BENZO(K)FLUORANTHENE | 2.1E-08 | <1% | 6.7E-09 | <1% | | | 4.2E-09 | <1% |
| | | CHRYSENE | 1.0E-08 | <1% | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | 5.1E-07 | 4% | 9.8E-08 | <1% | | | 5.6E-08 | <1% |
| | | INDENO(1,2,3-CD)PYRENE | 1.4E-07 | <1% | 2.6E-08 | <1% | | | 1.4E-08 | <1% |
| | | NAPHTHALENE | | | NA | NA | | | | |
| | | **VOCs** | | | | | | | | |
| | | TRICHLOROETHYLENE (TCE) | | | 4.1E-10 | <1% | | | | |
| | | **TICs** | | | | | | | | |
| | | BENZO[J]FLUORANTHENE | 4.9E-06 | **34%** | | | | | | |
| | | **Total Risks - Sediment** | **1.4E-05** | | **5.6E-05** | | **NA** | | **1.8E-05** | |
| Adult Swimmer | Surface Water | **Metals** | | | | | | | | |
| | | ALUMINUM | | | NA | NA | | | NA | NA |
| | | ANTIMONY | | | NA | NA | | | NA | NA |
| | | ARSENIC | 3.5E-06 | **6%** | 1.4E-05 | **57%** | | | 7.4E-06 | **51%** |
| | | CADMIUM | | | NA | NA | | | | |
| | | CHROMIUM | 3.4E-06 | **6%** | 5.9E-06 | **25%** | | | 7.0E-06 | **49%** |
| | | COBALT | NA | NA | NA | NA | | | NA | NA |
| | | CYANIDE | NA | NA | NA | NA | | | NA | NA |
| | | IRON | NA | NA | NA | NA | | | NA | NA |
| | | LEAD | | | NA | NA | | | NA | NA |
| | | MANGANESE | NA | NA | NA | NA | | | NA | NA |
| | | THALLIUM | | | NA | NA | | | NA | NA |
| | | VANADIUM | | | NA | NA | | | | |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution |
| Adult Swimmer | Surface Water | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | 5.8E-07 | 1% | | | | | | |
| | | BENZO(A)PYRENE | 2.6E-05 | **48%** | 4.4E-06 | **18%** | | | | |
| | | BENZO(B)FLUORANTHENE | 1.0E-06 | 2% | | | | | | |
| | | BIS(2-ETHYLHEXYL) PHTHALATE | 1.0E-05 | **19%** | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | 8.5E-06 | **16%** | | | | | | |
| | | INDENO(1,2,3-CD)PYRENE | 1.4E-06 | 3% | | | | | | |
| | | **Total Risks - Surface Water** | **5.4E-05** | | **2.4E-05** | | **NA** | | **1.4E-05** | |
| | | **Total Risks - Adult Swimmer** | **7E-05** | | **8E-05** | | **NA** | | **3E-05** | |
| Adolescent Swimmer | Sediment | **Metals** | | | | | | | | |
| | | ALUMINUM | NA | NA | NA | NA | | | NA | NA |
| | | ANTIMONY | NA | NA | NA | NA | | | NA | NA |
| | | ARSENIC | 1.2E-06 | **7%** | 3.5E-05 | **94%** | | | 1.1E-05 | **83%** |
| | | CADMIUM | | | NA | NA | | | NA | NA |
| | | CHROMIUM | 1.1E-07 | <1% | 1.1E-06 | 3% | | | 1.2E-06 | **9%** |
| | | COBALT | NA | NA | NA | NA | | | NA | NA |
| | | COPPER | NA | NA | NA | NA | | | NA | NA |
| | | CYANIDE | NA | NA | NA | NA | | | NA | NA |
| | | IRON | NA | NA | NA | NA | | | NA | NA |
| | | LEAD | NA | NA | NA | NA | | | NA | NA |
| | | MANGANESE | NA | NA | NA | NA | | | NA | NA |
| | | NICKEL | | | | | | | NA | NA |
| | | THALLIUM | NA | NA | | | | | NA | NA |
| | | VANADIUM | | | NA | NA | | | NA | NA |
| | | ZINC | | | NA | NA | | | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | 2.8E-08 | <1% | 3.4E-08 | <1% | | | 7.0E-08 | <1% |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | 1.2E-06 | **7%** | 8.3E-08 | <1% | | | 7.0E-08 | <1% |
| | | BENZO(A)PYRENE | 9.0E-06 | **51%** | 8.4E-07 | 2% | | | 6.6E-07 | **5%** |
| | | BENZO(B)FLUORANTHENE | 1.8E-06 | **10%** | 1.2E-07 | <1% | | | 8.5E-08 | <1% |
| | | BENZO(K)FLUORANTHENE | 3.8E-08 | <1% | 1.2E-08 | <1% | | | 7.4E-09 | <1% |
| | | CHRYSENE | 1.8E-08 | <1% | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | 9.2E-07 | **5%** | 1.7E-07 | <1% | | | 1.0E-07 | <1% |
| | | INDENO(1,2,3-CD)PYRENE | 2.5E-07 | 1% | 4.6E-08 | <1% | | | 2.5E-08 | <1% |
| | | NAPHTHALENE | | | NA | NA | | | | |
| | | **VOCs** | | | | | | | | |
| | | TRICHLOROETHYLENE (TCE) | | | 4.0E-10 | <1% | | | | |
| | | **TICs** | | | | | | | | |
| | | BENZO[J]FLUORANTHENE | 2.9E-06 | **17%** | | | | | | |
| | | **Total Risks - Sediment** | **1.8E-05** | | **3.7E-05** | | **NA** | | **1.3E-05** | |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution |
| Adolescent Swimmer | Surface Water | **Metals** | | | | | | | | |
| | | ALUMINUM | | | NA | NA | | | NA | NA |
| | | ANTIMONY | | | NA | NA | | | NA | NA |
| | | ARSENIC | 1.8E-06 | 3% | 7.2E-06 | **35%** | | | 3.9E-06 | **30%** |
| | | CADMIUM | | | NA | NA | | | | |
| | | CHROMIUM | 4.3E-06 | **7%** | 7.5E-06 | **37%** | | | 9.0E-06 | **70%** |
| | | COBALT | NA | NA | NA | NA | | | NA | NA |
| | | CYANIDE | NA | NA | NA | NA | | | NA | NA |
| | | IRON | NA | NA | NA | NA | | | NA | NA |
| | | LEAD | | | NA | NA | | | NA | NA |
| | | MANGANESE | NA | NA | NA | NA | | | NA | NA |
| | | THALLIUM | | | NA | NA | | | NA | NA |
| | | VANADIUM | | | NA | NA | | | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | 7.7E-07 | 1% | | | | | | |
| | | BENZO(A)PYRENE | 3.5E-05 | **57%** | 5.9E-06 | **29%** | | | | |
| | | BENZO(B)FLUORANTHENE | 1.3E-06 | 2% | | | | | | |
| | | BIS(2-ETHYLHEXYL) PHTHALATE | 4.5E-06 | **7%** | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | 1.1E-05 | **19%** | | | | | | |
| | | INDENO(1,2,3-CD)PYRENE | 1.9E-06 | 3% | | | | | | |
| | | **Total Risks - Surface Water** | **6.0E-05** | | **2.1E-05** | | **NA** | | **1.3E-05** | |
| | | **Total Risks - Adolescent Swimmer** | **8E-05** | | **6E-05** | | **NA** | | **3E-05** | |
| Child Swimmer | Sediment | **Metals** | | | | | | | | |
| | | ALUMINUM | NA | NA | NA | NA | | | NA | NA |
| | | ANTIMONY | NA | NA | NA | NA | | | NA | NA |
| | | ARSENIC | 3.3E-06 | 4% | 9.4E-05 | **86%** | | | 2.9E-05 | **66%** |
| | | CADMIUM | | | NA | NA | | | NA | NA |
| | | CHROMIUM | 9.6E-07 | 1% | 9.3E-06 | **8%** | | | 1.0E-05 | **23%** |
| | | COBALT | NA | NA | NA | NA | | | NA | NA |
| | | COPPER | NA | NA | NA | NA | | | NA | NA |
| | | CYANIDE | NA | NA | NA | NA | | | NA | NA |
| | | IRON | NA | NA | NA | NA | | | NA | NA |
| | | LEAD | NA | NA | NA | NA | | | NA | NA |
| | | MANGANESE | NA | NA | NA | NA | | | NA | NA |
| | | NICKEL | | | | | | | NA | NA |
| | | THALLIUM | NA | NA | | | | | NA | NA |
| | | VANADIUM | | | NA | NA | | | NA | NA |
| | | ZINC | | | NA | NA | | | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | 5.7E-08 | <1% | 7.0E-08 | <1% | | | 1.4E-07 | <1% |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution |
| Child Swimmer | Sediment | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | 6.0E-06 | **8%** | 4.1E-07 | <1% | | | 3.5E-07 | <1% |
| | | BENZO(A)PYRENE | 4.5E-05 | **59%** | 4.2E-06 | 4% | | | 3.3E-06 | **7%** |
| | | BENZO(B)FLUORANTHENE | 9.0E-06 | **12%** | 6.2E-07 | <1% | | | 4.2E-07 | <1% |
| | | BENZO(K)FLUORANTHENE | 1.9E-07 | <1% | 6.0E-08 | <1% | | | 3.7E-08 | <1% |
| | | CHRYSENE | 9.1E-08 | <1% | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | 4.6E-06 | **6%** | 8.7E-07 | <1% | | | 5.0E-07 | 1% |
| | | INDENO(1,2,3-CD)PYRENE | 1.2E-06 | 2% | 2.3E-07 | <1% | | | 1.3E-07 | <1% |
| | | NAPHTHALENE | | | NA | NA | | | | |
| | | **VOCs** | | | | | | | | |
| | | TRICHLOROETHYLENE (TCE) | | | 2.3E-09 | <1% | | | | |
| | | **TICs** | | | | | | | | |
| | | BENZO[J]FLUORANTHENE | 6.2E-06 | **8%** | | | | | | |
| | | **Total Risks - Sediment** | **7.6E-05** | | **1.1E-04** | | **NA** | | **4.4E-05** | |
| Child Swimmer | Surface Water | **Metals** | | | | | | | | |
| | | ALUMINUM | | | NA | NA | | | NA | NA |
| | | ANTIMONY | | | NA | NA | | | NA | NA |
| | | ARSENIC | 6.7E-06 | **5%** | 2.6E-05 | **42%** | | | 1.4E-05 | **33%** |
| | | CADMIUM | | | NA | NA | | | | |
| | | CHROMIUM | 1.4E-05 | **11%** | 2.4E-05 | **39%** | | | 2.8E-05 | **67%** |
| | | COBALT | NA | NA | NA | NA | | | NA | NA |
| | | CYANIDE | NA | NA | NA | NA | | | NA | NA |
| | | IRON | NA | NA | NA | NA | | | NA | NA |
| | | LEAD | | | NA | NA | | | NA | NA |
| | | MANGANESE | NA | NA | NA | NA | | | NA | NA |
| | | THALLIUM | | | NA | NA | | | NA | NA |
| | | VANADIUM | | | NA | NA | | | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | 1.5E-06 | 1% | | | | | | |
| | | BENZO(A)PYRENE | 6.7E-05 | **55%** | 1.1E-05 | **19%** | | | | |
| | | BENZO(B)FLUORANTHENE | 2.6E-06 | 2% | | | | | | |
| | | BIS(2-ETHYLHEXYL) PHTHALATE | 4.4E-06 | 4% | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | 2.2E-05 | **18%** | | | | | | |
| | | INDENO(1,2,3-CD)PYRENE | 3.6E-06 | 3% | | | | | | |
| | | **Total Risks - Surface Water** | **1.2E-04** | | **6.1E-05** | | **NA** | | **4.3E-05** | |
| | | **Total Risks - Child Swimmer** | **2E-04** | | **2E-04** | | **NA** | | **9E-05** | |
| Adult Angler | Tissue | **Metals** | | | | | | | | |
| | | ARSENIC | | | | | | | 1.8E-06 | **5%** |
| | | CHROMIUM | | | | | | | 1.3E-05 | **38%** |
| | | LEAD | | | | | | | NA | NA |
| | | **PEST/PCB** | | | | | | | | |
| | | 4,4'-DDD | | | | | | | 3.4E-07 | 1% |
| | | 4,4'-DDE | | | | | | | 6.3E-07 | 2% |
| | | AROCLOR-1254 | | | | | | | 1.3E-05 | **38%** |
| | | AROCLOR-1260 | | | | | | | 5.4E-06 | **16%** |
| | | **Total Risks - Fish Tissue** | | | | | | | **3.4E-05** | |
| | | **Total Risks - Adult Angler** | | | | | | | **3E-05** | |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution |
| Adolescent Angler | Tissue | **Metals** | | | | | | | | |
| | | ARSENIC | | | | | | | 8.4E-07 | 3% |
| | | CHROMIUM | | | | | | | 1.8E-05 | **65%** |
| | | LEAD | | | | | | | NA | NA |
| | | **PEST/PCB** | | | | | | | | |
| | | 4,4'-DDD | | | | | | | 1.6E-07 | <1% |
| | | 4,4'-DDE | | | | | | | 2.9E-07 | 1% |
| | | AROCLOR-1254 | | | | | | | 5.9E-06 | **21%** |
| | | AROCLOR-1260 | | | | | | | 2.4E-06 | **9%** |
| | | **Total Risks - Fish Tissue** | | | | | | | **2.7E-05** | |
| | | **Total Risks - Adolescent Angler** | | | | | | | **3E-05** | |
| Child Angler | Tissue | **Metals** | | | | | | | | |
| | | ARSENIC | | | | | | | 7.9E-07 | 2% |
| | | CHROMIUM | | | | | | | 4.0E-05 | **82%** |
| | | LEAD | | | | | | | NA | NA |
| | | **PEST/PCB** | | | | | | | | |
| | | 4,4'-DDD | | | | | | | 1.5E-07 | <1% |
| | | 4,4'-DDE | | | | | | | 2.7E-07 | <1% |
| | | AROCLOR-1254 | | | | | | | 5.5E-06 | **11%** |
| | | AROCLOR-1260 | | | | | | | 2.3E-06 | 5% |
| | | **Total Risks - Fish Tissue** | | | | | | | **4.9E-05** | |
| | | **Total Risks - Child Angler** | | | | | | | **5E-05** | |

Notes:

NA – Not Applicable.

**BOLD, Shaded – Percentage contribution for specific medium, receptor, and exposure area ≥5%.**

**Table 14.2**

**Non-cancer Hazard and Percentage Contribution by Medium for Each Receptor and Exposure Area**

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution |
| Adult Recreator | Soil | **Metals** | | | | | | | | |
| | | ALUMINUM | | | 2.0E-03 | <1% | 4.8E-03 | <1% | 2.4E-03 | 5% |
| | | ANTIMONY | | | 1.8E-03 | <1% | 6.8E-03 | <1% | 4.6E-03 | **9%** |
| | | ARSENIC | | | 1.4E-01 | **71%** | 6.2E-01 | **70%** | 1.0E-02 | **21%** |
| | | BARIUM | | | | | 5.2E-03 | <1% | | |
| | | CADMIUM | | | 1.4E-03 | <1% | 1.8E-03 | <1% | | |
| | | CHROMIUM | | | 3.5E-04 | <1% | 5.5E-03 | <1% | 1.6E-04 | <1% |
| | | COBALT | | | 1.9E-03 | <1% | 1.1E-02 | 1% | 1.5E-03 | 3% |
| | | COPPER | | | | | 1.8E-03 | <1% | | |
| | | CYANIDE | | | 1.9E-03 | <1% | 1.5E-01 | **17%** | 1.2E-03 | 2% |
| | | IRON | | | 4.6E-03 | 2% | 2.0E-02 | 2% | 5.8E-03 | **12%** |
| | | LEAD | | | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | | | | | 7.5E-03 | <1% | | |
| | | MERCURY | | | | | 1.3E-03 | <1% | | |
| | | NICKEL | | | | | 3.6E-04 | <1% | | |
| | | THALLIUM | | | 4.4E-02 | **22%** | 3.4E-02 | 4% | 2.3E-02 | **46%** |
| | | VANADIUM | | | 1.3E-03 | <1% | 3.1E-03 | <1% | | |
| | | ZINC | | | | | 9.1E-04 | <1% | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | | | | | 2.2E-03 | <1% | | |
| | | AROCLOR-1260 | | | | | 6.7E-03 | <1% | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | | | | | NA | NA | | |
| | | BENZO(A)PYRENE | | | 3.6E-04 | <1% | 4.7E-03 | <1% | 3.4E-04 | <1% |
| | | BENZO(B)FLUORANTHENE | | | | | NA | NA | NA | NA |
| | | BENZO(K)FLUORANTHENE | | | | | NA | NA | | |
| | | DIBENZO(A,H)ANTHRACENE | | | | | NA | NA | | |
| | | INDENO(1,2,3-CD)PYRENE | | | | | NA | NA | | |
| | | NAPHTHALENE | | | | | 2.2E-04 | <1% | | |
| | | **Total Hazards - Soil** | **NA** | | **2.0E-01** | | **8.9E-01** | | **4.9E-02** | |
| Adult Recreator | Sediment | **Metals** | | | | | | | | |
| | | ALUMINUM | 4.5E-04 | <1% | 2.2E-03 | 1% | 1.3E-03 | <1% | 2.4E-03 | 3% |
| | | ANTIMONY | 8.5E-04 | 2% | 2.7E-03 | 2% | 9.2E-04 | <1% | 7.7E-04 | 1% |
| | | ARSENIC | 4.8E-03 | **10%** | 1.4E-01 | **79%** | 1.9E-01 | **77%** | 4.3E-02 | **58%** |
| | | BARIUM | | | | | 7.6E-04 | <1% | | |
| | | CADMIUM | | | 3.0E-03 | 2% | 1.0E-03 | <1% | 1.7E-03 | 2% |
| | | CHROMIUM | 4.0E-05 | <1% | 3.9E-04 | <1% | 1.1E-03 | <1% | 4.3E-04 | <1% |
| | | COBALT | 3.1E-03 | **7%** | 8.4E-03 | 5% | 2.5E-03 | 1% | 4.3E-03 | **6%** |
| | | COPPER | 3.8E-04 | <1% | 6.6E-04 | <1% | 6.4E-04 | <1% | 7.9E-04 | 1% |
| | | CYANIDE | 6.7E-04 | 1% | 3.8E-03 | 2% | 1.2E-02 | 5% | 1.0E-03 | 1% |
| | | IRON | 1.7E-03 | 4% | 9.1E-03 | **5%** | 3.7E-03 | 2% | 5.7E-03 | **8%** |
| | | LEAD | NA | NA | NA | NA | NA | NA | NA | NA |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution |
| Adult Recreator | Sediment | MANGANESE | 6.9E-04 | 1% | 6.9E-04 | <1% | 5.1E-04 | <1% | 8.9E-04 | 1% |
| | | NICKEL | | | | | 2.5E-04 | <1% | 2.8E-04 | <1% |
| | | THALLIUM | 1.3E-02 | **28%** | | | 2.5E-02 | **10%** | 7.0E-03 | **10%** |
| | | VANADIUM | | | 1.7E-03 | <1% | 7.3E-04 | <1% | 7.9E-04 | 1% |
| | | ZINC | | | 5.6E-04 | <1% | 2.4E-04 | <1% | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | 1.3E-03 | 3% | 1.6E-03 | <1% | 2.7E-03 | 1% | 3.3E-03 | 5% |
| | | AROCLOR-1260 | | | | | 1.2E-03 | <1% | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | BENZO(A)PYRENE | 1.9E-02 | **41%** | 1.8E-03 | 1% | 9.0E-04 | <1% | 1.4E-03 | 2% |
| | | BENZO(B)FLUORANTHENE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | BENZO(K)FLUORANTHENE | NA | NA | NA | NA | | | NA | NA |
| | | CHRYSENE | NA | NA | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | INDENO(1,2,3-CD)PYRENE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | NAPHTHALENE | | | 5.5E-05 | <1% | | | | |
| | | **VOCs** | | | | | | | | |
| | | TRICHLOROETHYLENE (TCE) | | | 2.0E-05 | <1% | | | | |
| | | **TICs** | | | | | | | | |
| | | BENZO[J]FLUORANTHENE | NA | NA | | | | | | |
| | | **Total Hazards - Sediment** | **4.6E-02** | | **1.7E-01** | | **2.4E-01** | | **7.3E-02** | |
| Adult Recreator | Surface Water | **Metals** | | | | | | | | |
| | | ALUMINUM | | | 1.2E-05 | <1% | 5.6E-05 | <1% | 1.2E-05 | <1% |
| | | ANTIMONY | | | 1.7E-04 | 2% | 5.1E-04 | 2% | 5.6E-04 | **7%** |
| | | ARSENIC | 2.4E-04 | <1% | 9.3E-04 | **13%** | 3.3E-03 | **12%** | 5.1E-04 | **6%** |
| | | BARIUM | | | | | 2.9E-04 | 1% | | |
| | | CADMIUM | | | 2.3E-04 | 3% | 9.1E-04 | 3% | | |
| | | CHROMIUM | 3.1E-04 | <1% | 5.4E-04 | **7%** | 1.4E-02 | **54%** | 6.5E-04 | **8%** |
| | | COBALT | 2.6E-05 | <1% | 1.2E-05 | <1% | 3.3E-05 | <1% | 1.9E-05 | <1% |
| | | COPPER | | | | | 6.4E-06 | <1% | | |
| | | CYANIDE | 6.7E-05 | <1% | 3.0E-05 | <1% | 1.3E-04 | <1% | 2.7E-05 | <1% |
| | | IRON | 1.5E-04 | <1% | 8.4E-05 | 1% | 1.8E-04 | <1% | 4.7E-05 | <1% |
| | | LEAD | | | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | 9.0E-03 | **24%** | 6.6E-04 | **9%** | 1.5E-03 | **6%** | 7.5E-04 | **10%** |
| | | MERCURY | | | | | 8.7E-05 | <1% | | |
| | | THALLIUM | | | 1.1E-03 | **15%** | 4.9E-03 | **19%** | 5.3E-03 | **67%** |
| | | VANADIUM | | | 1.7E-04 | 2% | 3.6E-04 | 1% | | |
| | | ZINC | | | | | 8.7E-06 | <1% | | |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution |
| Adult Recreator | Surface Water | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | NA | NA | | | | | | |
| | | BENZO(A)PYRENE | 2.0E-02 | **52%** | 3.4E-03 | **46%** | | | | |
| | | BENZO(B)FLUORANTHENE | NA | NA | | | | | | |
| | | BIS(2-ETHYLHEXYL) PHTHALATE | 8.3E-03 | **22%** | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | NA | NA | | | | | | |
| | | INDENO(1,2,3-CD)PYRENE | NA | NA | | | | | | |
| | | **Total Hazards - Surface Water** | **3.8E-02** | | **7.4E-03** | | **2.6E-02** | | **7.8E-03** | |
| | | **Total Hazards - Adult Recreator** | **8E-02** | | **4E-01** | | **1E+00** | | **1E-01** | |
| Adolescent Recreator | Soil | **Metals** | | | | | | | | |
| | | ALUMINUM | | | 3.6E-03 | 1% | 8.6E-03 | <1% | 4.3E-03 | 5% |
| | | ANTIMONY | | | 3.3E-03 | <1% | 1.2E-02 | <1% | 8.4E-03 | **10%** |
| | | ARSENIC | | | 2.5E-01 | **70%** | 1.1E+00 | **73%** | 1.8E-02 | **21%** |
| | | BARIUM | | | | | 9.2E-03 | <1% | | |
| | | CADMIUM | | | 2.4E-03 | <1% | 3.1E-03 | <1% | | |
| | | CHROMIUM | | | 6.2E-04 | <1% | 1.0E-02 | <1% | 2.9E-04 | <1% |
| | | COBALT | | | 3.4E-03 | <1% | 2.0E-02 | 1% | 2.7E-03 | 3% |
| | | COPPER | | | | | 3.3E-03 | <1% | | |
| | | CYANIDE | | | 2.3E-03 | <1% | 1.9E-01 | **13%** | 1.4E-03 | 2% |
| | | IRON | | | 8.3E-03 | 2% | 3.7E-02 | 2% | 1.0E-02 | **12%** |
| | | LEAD | | | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | | | | | 1.3E-02 | <1% | | |
| | | MERCURY | | | | | 2.4E-03 | <1% | | |
| | | NICKEL | | | | | 6.4E-04 | <1% | | |
| | | THALLIUM | | | 7.9E-02 | **22%** | 6.1E-02 | 4% | 4.1E-02 | **47%** |
| | | VANADIUM | | | 2.3E-03 | <1% | 5.7E-03 | <1% | | |
| | | ZINC | | | | | 1.6E-03 | <1% | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | | | | | 3.7E-03 | <1% | | |
| | | AROCLOR-1260 | | | | | 1.1E-02 | <1% | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | | | | | NA | NA | | |
| | | BENZO(A)PYRENE | | | 6.0E-04 | <1% | 7.8E-03 | <1% | 5.6E-04 | <1% |
| | | BENZO(B)FLUORANTHENE | | | | | NA | NA | NA | NA |
| | | BENZO(K)FLUORANTHENE | | | | | NA | NA | | |
| | | DIBENZO(A,H)ANTHRACENE | | | | | NA | NA | | |
| | | INDENO(1,2,3-CD)PYRENE | | | | | NA | NA | | |
| | | NAPHTHALENE | | | | | 2.2E-04 | <1% | | |
| | | **Total Hazards - Soil** | **NA** | | **3.5E-01** | | **1.5E+00** | | **8.7E-02** | |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution |
| Adolescent Recreator | Sediment | **Metals** | | | | | | | | |
| | | ALUMINUM | 8.1E-04 | 1% | 4.0E-03 | 1% | 2.3E-03 | <1% | 4.4E-03 | 4% |
| | | ANTIMONY | 1.5E-03 | 2% | 4.9E-03 | 2% | 1.7E-03 | <1% | 1.4E-03 | 1% |
| | | ARSENIC | 7.8E-03 | **10%** | 2.3E-01 | **78%** | 3.1E-01 | **76%** | 7.0E-02 | **56%** |
| | | BARIUM | | | | | 1.4E-03 | <1% | | |
| | | CADMIUM | | | 5.0E-03 | 2% | 1.7E-03 | <1% | 2.9E-03 | 2% |
| | | CHROMIUM | 7.3E-05 | <1% | 7.0E-04 | <1% | 2.0E-03 | <1% | 7.8E-04 | <1% |
| | | COBALT | 5.6E-03 | **7%** | 1.5E-02 | **5%** | 4.5E-03 | 1% | 7.8E-03 | **6%** |
| | | COPPER | 6.9E-04 | <1% | 1.2E-03 | <1% | 1.2E-03 | <1% | 1.4E-03 | 1% |
| | | CYANIDE | 1.2E-03 | 2% | 6.9E-03 | 2% | 2.2E-02 | **5%** | 1.9E-03 | 1% |
| | | IRON | 3.1E-03 | 4% | 1.6E-02 | **6%** | 6.7E-03 | 2% | 1.0E-02 | **8%** |
| | | LEAD | NA | NA | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | 1.2E-03 | 2% | 1.2E-03 | <1% | 9.2E-04 | <1% | 1.6E-03 | 1% |
| | | NICKEL | | | | | 4.5E-04 | <1% | 5.0E-04 | <1% |
| | | THALLIUM | 2.3E-02 | **30%** | | | 4.5E-02 | **11%** | 1.3E-02 | **10%** |
| | | VANADIUM | | | 3.0E-03 | 1% | 1.3E-03 | <1% | 1.4E-03 | 1% |
| | | ZINC | | | 1.0E-03 | <1% | 4.4E-04 | <1% | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | 2.0E-03 | 3% | 2.5E-03 | <1% | 4.2E-03 | 1% | 5.1E-03 | 4% |
| | | AROCLOR-1260 | | | | | 1.8E-03 | <1% | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | BENZO(A)PYRENE | 2.9E-02 | **38%** | 2.7E-03 | <1% | 1.4E-03 | <1% | 2.1E-03 | 2% |
| | | BENZO(B)FLUORANTHENE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | BENZO(K)FLUORANTHENE | NA | NA | NA | NA | | | NA | NA |
| | | CHRYSENE | NA | NA | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | INDENO(1,2,3-CD)PYRENE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | NAPHTHALENE | | | 8.5E-05 | <1% | | | | |
| | | **VOCs** | | | | | | | | |
| | | TRICHLOROETHYLENE (TCE) | | | 3.6E-05 | <1% | | | | |
| | | **TICs** | | | | | | | | |
| | | BENZO[J]FLUORANTHENE | NA | NA | | | | | | |
| | | **Total Hazards - Sediment** | **7.7E-02** | | **2.9E-01** | | **4.1E-01** | | **1.2E-01** | |
| Adolescent Recreator | Surface Water | **Metals** | | | | | | | | |
| | | ALUMINUM | | | 1.6E-05 | <1% | 7.8E-05 | <1% | 1.7E-05 | <1% |
| | | ANTIMONY | | | 2.4E-04 | 2% | 7.0E-04 | 2% | 7.8E-04 | **7%** |
| | | ARSENIC | 3.3E-04 | <1% | 1.3E-03 | **13%** | 4.5E-03 | **12%** | 7.0E-04 | **6%** |
| | | BARIUM | | | | | 4.1E-04 | 1% | | |
| | | CADMIUM | | | 3.1E-04 | 3% | 1.3E-03 | 3% | | |
| | | CHROMIUM | 4.3E-04 | <1% | 7.5E-04 | **7%** | 2.0E-02 | **54%** | 9.0E-04 | **8%** |
| | | COBALT | 3.6E-05 | <1% | 1.7E-05 | <1% | 4.6E-05 | <1% | 2.7E-05 | <1% |
| | | COPPER | | | | | 8.9E-06 | <1% | | |
| | | CYANIDE | 9.3E-05 | <1% | 4.2E-05 | <1% | 1.8E-04 | <1% | 3.8E-05 | <1% |
| | | IRON | 2.0E-04 | <1% | 1.2E-04 | 1% | 2.5E-04 | <1% | 6.5E-05 | <1% |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution |
| Adolescent Recreator | Surface Water | LEAD | | | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | 1.2E-02 | **24%** | 9.2E-04 | **9%** | 2.1E-03 | **6%** | 1.0E-03 | **10%** |
| | | MERCURY | | | | | 1.2E-04 | <1% | | |
| | | THALLIUM | | | 1.6E-03 | **15%** | 6.8E-03 | **19%** | 7.3E-03 | **67%** |
| | | VANADIUM | | | 2.4E-04 | 2% | 5.0E-04 | 1% | | |
| | | ZINC | | | | | 1.2E-05 | <1% | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | NA | NA | | | | | | |
| | | BENZO(A)PYRENE | 2.8E-02 | **52%** | 4.7E-03 | **46%** | | | | |
| | | BENZO(B)FLUORANTHENE | NA | NA | | | | | | |
| | | BIS(2-ETHYLHEXYL) PHTHALATE | 1.1E-02 | **22%** | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | NA | NA | | | | | | |
| | | INDENO(1,2,3-CD)PYRENE | NA | NA | | | | | | |
| | | **Total Hazards - Surface Water** | **5.3E-02** | | **1.0E-02** | | **3.7E-02** | | **1.1E-02** | |
| | | **Total Hazards - Adolescent Recreator** | **1E-01** | | **7E-01** | | **2E+00** | | **2E-01** | |
| Child Recreator | Soil | **Metals** | | | | | | | | |
| | | ALUMINUM | | | 2.1E-02 | 1% | 5.0E-02 | <1% | 2.5E-02 | 5% |
| | | ANTIMONY | | | 1.9E-02 | <1% | 7.3E-02 | <1% | 5.0E-02 | **10%** |
| | | ARSENIC | | | 1.4E+00 | **70%** | 6.1E+00 | **77%** | 1.0E-01 | **20%** |
| | | BARIUM | | | | | 5.3E-02 | <1% | | |
| | | CADMIUM | | | 1.4E-02 | <1% | 1.7E-02 | <1% | | |
| | | CHROMIUM | | | 3.7E-03 | <1% | 5.9E-02 | <1% | 1.7E-03 | <1% |
| | | COBALT | | | 2.0E-02 | <1% | 1.2E-01 | 1% | 1.6E-02 | 3% |
| | | COPPER | | | | | 2.0E-02 | <1% | | |
| | | CYANIDE | | | 6.8E-03 | <1% | 5.6E-01 | **7%** | 4.2E-03 | <1% |
| | | IRON | | | 4.9E-02 | 2% | 2.2E-01 | 3% | 6.1E-02 | **12%** |
| | | LEAD | | | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | | | | | 7.8E-02 | <1% | | |
| | | MERCURY | | | | | 1.4E-02 | <1% | | |
| | | NICKEL | | | | | 3.8E-03 | <1% | | |
| | | THALLIUM | | | 4.7E-01 | **23%** | 3.6E-01 | 5% | 2.4E-01 | **48%** |
| | | VANADIUM | | | 1.4E-02 | <1% | 3.3E-02 | <1% | | |
| | | ZINC | | | | | 9.7E-03 | <1% | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | | | | | 2.0E-02 | <1% | | |
| | | AROCLOR-1260 | | | | | 6.0E-02 | <1% | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | | | | | NA | NA | | |
| | | BENZO(A)PYRENE | | | 3.2E-03 | <1% | 4.2E-02 | <1% | 3.0E-03 | <1% |
| | | BENZO(B)FLUORANTHENE | | | | | NA | NA | NA | NA |
| | | BENZO(K)FLUORANTHENE | | | | | NA | NA | | |
| | | DIBENZO(A,H)ANTHRACENE | | | | | NA | NA | | |
| | | INDENO(1,2,3-CD)PYRENE | | | | | NA | NA | | |
| | | NAPHTHALENE | | | | | 3.0E-04 | <1% | | |
| | | **Total Hazards - Soil** | **NA** | | **2.0E+00** | | **7.9E+00** | | **5.1E-01** | |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution |
| Child Recreator | Sediment | **Metals** | | | | | | | | |
| | | ALUMINUM | 4.8E-03 | 1% | 2.4E-02 | 2% | 1.3E-02 | <1% | 2.6E-02 | 4% |
| | | ANTIMONY | 9.1E-03 | 2% | 2.9E-02 | 2% | 9.9E-03 | <1% | 8.2E-03 | 1% |
| | | ARSENIC | 3.5E-02 | **10%** | 1.0E+00 | **74%** | 1.4E+00 | **71%** | 3.2E-01 | **51%** |
| | | BARIUM | | | | | 8.1E-03 | <1% | | |
| | | CADMIUM | | | 2.3E-02 | 2% | 8.0E-03 | <1% | 1.4E-02 | 2% |
| | | CHROMIUM | 4.3E-04 | <1% | 4.2E-03 | <1% | 1.2E-02 | <1% | 4.6E-03 | <1% |
| | | COBALT | 3.3E-02 | **9%** | 9.0E-02 | **6%** | 2.7E-02 | 1% | 4.6E-02 | **7%** |
| | | COPPER | 4.1E-03 | 1% | 7.1E-03 | <1% | 6.8E-03 | <1% | 8.4E-03 | 1% |
| | | CYANIDE | 7.2E-03 | 2% | 4.1E-02 | 3% | 1.3E-01 | **7%** | 1.1E-02 | 2% |
| | | IRON | 1.8E-02 | **5%** | 9.7E-02 | **7%** | 3.9E-02 | 2% | 6.1E-02 | **10%** |
| | | LEAD | NA | NA | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | 7.3E-03 | 2% | 7.3E-03 | <1% | 5.5E-03 | <1% | 9.5E-03 | 2% |
| | | NICKEL | | | | | 2.7E-03 | <1% | 2.9E-03 | <1% |
| | | THALLIUM | 1.4E-01 | **38%** | | | 2.6E-01 | **14%** | 7.5E-02 | **12%** |
| | | VANADIUM | | | 1.8E-02 | 1% | 7.8E-03 | <1% | 8.4E-03 | 1% |
| | | ZINC | | | 6.0E-03 | <1% | 2.6E-03 | <1% | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | 7.0E-03 | 2% | 8.6E-03 | <1% | 1.4E-02 | <1% | 1.8E-02 | 3% |
| | | AROCLOR-1260 | | | | | 6.2E-03 | <1% | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | BENZO(A)PYRENE | 1.0E-01 | **28%** | 9.6E-03 | <1% | 4.9E-03 | <1% | 7.5E-03 | 1% |
| | | BENZO(B)FLUORANTHENE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | BENZO(K)FLUORANTHENE | NA | NA | NA | NA | | | NA | NA |
| | | CHRYSENE | NA | NA | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | INDENO(1,2,3-CD)PYRENE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | NAPHTHALENE | | | 3.0E-04 | <1% | | | | |
| | | **VOCs** | | | | | | | | |
| | | TRICHLOROETHYLENE (TCE) | | | 2.1E-04 | <1% | | | | |
| | | **TICs** | | | | | | | | |
| | | BENZO[J]FLUORANTHENE | NA | NA | | | | | | |
| | | **Total Hazards - Sediment** | **3.7E-01** | | **1.4E+00** | | **1.9E+00** | | **6.2E-01** | |
| Child Recreator | Surface Water | **Metals** | | | | | | | | |
| | | ALUMINUM | | | 2.5E-05 | <1% | 1.2E-04 | <1% | 2.6E-05 | <1% |
| | | ANTIMONY | | | 3.7E-04 | 2% | 1.1E-03 | 2% | 1.2E-03 | **7%** |
| | | ARSENIC | 5.0E-04 | <1% | 1.9E-03 | **13%** | 6.9E-03 | **12%** | 1.1E-03 | **6%** |
| | | BARIUM | | | | | 6.2E-04 | 1% | | |
| | | CADMIUM | | | 4.7E-04 | 3% | 1.9E-03 | 3% | | |
| | | CHROMIUM | 6.5E-04 | <1% | 1.1E-03 | **7%** | 3.0E-02 | **54%** | 1.4E-03 | **8%** |
| | | COBALT | 5.4E-05 | <1% | 2.6E-05 | <1% | 6.9E-05 | <1% | 4.1E-05 | <1% |
| | | COPPER | | | | | 1.3E-05 | <1% | | |
| | | CYANIDE | 1.4E-04 | <1% | 6.4E-05 | <1% | 2.7E-04 | <1% | 5.7E-05 | <1% |
| | | IRON | 3.1E-04 | <1% | 1.8E-04 | 1% | 3.7E-04 | <1% | 9.8E-05 | <1% |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution |
| Child Recreator | Surface Water | LEAD | | | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | 1.9E-02 | **24%** | 1.4E-03 | **9%** | 3.2E-03 | **6%** | 1.6E-03 | **10%** |
| | | MERCURY | | | | | 1.8E-04 | <1% | | |
| | | THALLIUM | | | 2.4E-03 | **15%** | 1.0E-02 | **19%** | 1.1E-02 | **67%** |
| | | VANADIUM | | | 3.6E-04 | 2% | 7.5E-04 | 1% | | |
| | | ZINC | | | | | 1.8E-05 | <1% | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | NA | NA | | | | | | |
| | | BENZO(A)PYRENE | 4.2E-02 | **52%** | 7.1E-03 | **46%** | | | | |
| | | BENZO(B)FLUORANTHENE | NA | NA | | | | | | |
| | | BIS(2-ETHYLHEXYL) PHTHALATE | 1.7E-02 | **22%** | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | NA | NA | | | | | | |
| | | INDENO(1,2,3-CD)PYRENE | NA | NA | | | | | | |
| | | **Total Hazards - Surface Water** | **8.0E-02** | | **1.5E-02** | | **5.6E-02** | | **1.6E-02** | |
| | | **Total Hazards - Child Recreator** | **4E-01** | | **3E+00** | | **1E+01** | | **1E+00** | |
| Adult Swimmer | Sediment | **Metals** | | | | | | | | |
| | | ALUMINUM | 1.1E-03 | <1% | 5.3E-03 | 1% | | | 5.8E-03 | 3% |
| | | ANTIMONY | 2.0E-03 | 2% | 6.5E-03 | 2% | | | 1.8E-03 | 1% |
| | | ARSENIC | 1.1E-02 | **10%** | 3.3E-01 | **79%** | | | 1.0E-01 | **58%** |
| | | CADMIUM | | | 7.1E-03 | 2% | | | 4.1E-03 | 2% |
| | | CHROMIUM | 9.6E-05 | <1% | 9.3E-04 | <1% | | | 1.0E-03 | <1% |
| | | COBALT | 7.4E-03 | **7%** | 2.0E-02 | 5% | | | 1.0E-02 | **6%** |
| | | COPPER | 9.1E-04 | <1% | 1.6E-03 | <1% | | | 1.9E-03 | 1% |
| | | CYANIDE | 1.6E-03 | 1% | 9.1E-03 | 2% | | | 2.4E-03 | 1% |
| | | IRON | 4.1E-03 | 4% | 2.2E-02 | **5%** | | | 1.4E-02 | **8%** |
| | | LEAD | NA | NA | NA | NA | | | NA | NA |
| | | MANGANESE | 1.6E-03 | 1% | 1.6E-03 | <1% | | | 2.1E-03 | 1% |
| | | NICKEL | | | | | | | 6.6E-04 | <1% |
| | | THALLIUM | 3.1E-02 | **28%** | | | | | 1.7E-02 | **10%** |
| | | VANADIUM | | | 4.0E-03 | <1% | | | 1.9E-03 | 1% |
| | | ZINC | | | 1.3E-03 | <1% | | | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | 3.1E-03 | 3% | 3.9E-03 | <1% | | | 7.9E-03 | 5% |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | NA | NA | NA | NA | | | NA | NA |
| | | BENZO(A)PYRENE | 4.5E-02 | **41%** | 4.2E-03 | 1% | | | 3.3E-03 | 2% |
| | | BENZO(B)FLUORANTHENE | NA | NA | NA | NA | | | NA | NA |
| | | BENZO(K)FLUORANTHENE | NA | NA | NA | NA | | | NA | NA |
| | | CHRYSENE | NA | NA | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | NA | NA | NA | NA | | | NA | NA |
| | | INDENO(1,2,3-CD)PYRENE | NA | NA | NA | NA | | | NA | NA |
| | | NAPHTHALENE | | | 1.3E-04 | <1% | | | | |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution |
| Adult Swimmer | Sediment | **VOCs** | | | | | | | | |
| | | TRICHLOROETHYLENE (TCE) | | | 4.8E-05 | <1% | | | | |
| | | **TICs** | | | | | | | | |
| | | BENZO[J]FLUORANTHENE | NA | NA | | | | | | |
| | | **Total Hazards - Sediment** | **1.1E-01** | | **4.1E-01** | | **NA** | | **1.8E-01** | |
| Adult Swimmer | Surface Water | **Metals** | | | | | | | | |
| | | ALUMINUM | | | 1.0E-03 | <1% | | | 1.1E-03 | <1% |
| | | ANTIMONY | | | 4.9E-03 | 2% | | | 1.6E-02 | 3% |
| | | ARSENIC | 2.1E-02 | 4% | 8.2E-02 | **30%** | | | 4.4E-02 | **8%** |
| | | CADMIUM | | | 4.8E-03 | 2% | | | | |
| | | CHROMIUM | 6.0E-03 | 1% | 1.1E-02 | 4% | | | 1.3E-02 | 2% |
| | | COBALT | 5.0E-03 | <1% | 2.4E-03 | <1% | | | 3.7E-03 | <1% |
| | | CYANIDE | 5.9E-03 | 1% | 2.7E-03 | <1% | | | 2.4E-03 | <1% |
| | | IRON | 1.3E-02 | 2% | 7.4E-03 | 3% | | | 4.1E-03 | <1% |
| | | LEAD | | | NA | NA | | | NA | NA |
| | | MANGANESE | 1.8E-01 | **33%** | 1.4E-02 | **5%** | | | 1.5E-02 | 3% |
| | | THALLIUM | | | 9.9E-02 | **37%** | | | 4.6E-01 | **82%** |
| | | VANADIUM | | | 3.4E-03 | 1% | | | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | NA | NA | | | | | | |
| | | BENZO(A)PYRENE | 2.3E-01 | **41%** | 4.0E-02 | **15%** | | | | |
| | | BENZO(B)FLUORANTHENE | NA | NA | | | | | | |
| | | BIS(2-ETHYLHEXYL) PHTHALATE | 9.7E-02 | **17%** | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | NA | NA | | | | | | |
| | | INDENO(1,2,3-CD)PYRENE | NA | NA | | | | | | |
| | | **Total Hazards - Surface Water** | **5.7E-01** | | **2.7E-01** | | **NA** | | **5.6E-01** | |
| | | **Total Hazards - Adult Swimmer** | **7E-01** | | **7E-01** | | **NA** | | **7E-01** | |
| Adolescent Swimmer | Sediment | **Metals** | | | | | | | | |
| | | ALUMINUM | 1.9E-03 | 1% | 9.5E-03 | 1% | | | 1.0E-02 | 4% |
| | | ANTIMONY | 3.7E-03 | 2% | 1.2E-02 | 2% | | | 3.3E-03 | 1% |
| | | ARSENIC | 1.9E-02 | **10%** | 5.4E-01 | **78%** | | | 1.7E-01 | **56%** |
| | | CADMIUM | | | 1.2E-02 | 2% | | | 6.9E-03 | 2% |
| | | CHROMIUM | 1.7E-04 | <1% | 1.7E-03 | <1% | | | 1.9E-03 | <1% |
| | | COBALT | 1.3E-02 | **7%** | 3.6E-02 | **5%** | | | 1.9E-02 | **6%** |
| | | COPPER | 1.6E-03 | <1% | 2.9E-03 | <1% | | | 3.4E-03 | 1% |
| | | CYANIDE | 2.9E-03 | 2% | 1.6E-02 | 2% | | | 4.4E-03 | 1% |
| | | IRON | 7.4E-03 | 4% | 3.9E-02 | **6%** | | | 2.5E-02 | **8%** |
| | | LEAD | NA | NA | NA | NA | | | NA | NA |
| | | MANGANESE | 3.0E-03 | 2% | 3.0E-03 | <1% | | | 3.8E-03 | 1% |
| | | NICKEL | | | | | | | 1.2E-03 | <1% |
| | | THALLIUM | 5.6E-02 | **30%** | | | | | 3.0E-02 | **10%** |
| | | VANADIUM | | | 7.3E-03 | 1% | | | 3.4E-03 | 1% |
| | | ZINC | | | 2.4E-03 | <1% | | | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | 4.9E-03 | 3% | 6.0E-03 | <1% | | | 1.2E-02 | 4% |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution |
| Adolescent Swimmer | Sediment | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | NA | NA | NA | NA | | | NA | NA |
| | | BENZO(A)PYRENE | 7.0E-02 | **38%** | 6.5E-03 | <1% | | | 5.1E-03 | 2% |
| | | BENZO(B)FLUORANTHENE | NA | NA | NA | NA | | | NA | NA |
| | | BENZO(K)FLUORANTHENE | NA | NA | NA | NA | | | NA | NA |
| | | CHRYSENE | NA | NA | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | NA | NA | NA | NA | | | NA | NA |
| | | INDENO(1,2,3-CD)PYRENE | NA | NA | NA | NA | | | NA | NA |
| | | NAPHTHALENE | | | 2.0E-04 | <1% | | | | |
| | | **VOCs** | | | | | | | | |
| | | TRICHLOROETHYLENE (TCE) | | | 8.7E-05 | <1% | | | | |
| | | **TICs** | | | | | | | | |
| | | BENZO[J]FLUORANTHENE | NA | NA | | | | | | |
| | | **Total Hazards - Sediment** | **1.8E-01** | | **6.9E-01** | | **NA** | | **3.0E-01** | |
| Adolescent Swimmer | Surface Water | **Metals** | | | | | | | | |
| | | ALUMINUM | | | 1.4E-03 | <1% | | | 1.5E-03 | <1% |
| | | ANTIMONY | | | 6.0E-03 | 2% | | | 1.9E-02 | 3% |
| | | ARSENIC | 2.9E-02 | 4% | 1.1E-01 | **32%** | | | 6.1E-02 | **8%** |
| | | CADMIUM | | | 5.5E-03 | 2% | | | | |
| | | CHROMIUM | 6.7E-03 | 1% | 1.2E-02 | 3% | | | 1.4E-02 | 2% |
| | | COBALT | 7.1E-03 | 1% | 3.3E-03 | <1% | | | 5.3E-03 | <1% |
| | | CYANIDE | 8.1E-03 | 1% | 3.7E-03 | 1% | | | 3.3E-03 | <1% |
| | | IRON | 1.8E-02 | 3% | 1.0E-02 | 3% | | | 5.6E-03 | <1% |
| | | LEAD | | | NA | NA | | | NA | NA |
| | | MANGANESE | 2.1E-01 | **32%** | 1.5E-02 | 4% | | | 1.7E-02 | 2% |
| | | THALLIUM | | | 1.4E-01 | **38%** | | | 6.4E-01 | **83%** |
| | | VANADIUM | | | 3.7E-03 | 1% | | | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | NA | NA | | | | | | |
| | | BENZO(A)PYRENE | 2.7E-01 | **41%** | 4.6E-02 | **13%** | | | | |
| | | BENZO(B)FLUORANTHENE | NA | NA | | | | | | |
| | | BIS(2-ETHYLHEXYL) PHTHALATE | 1.1E-01 | **17%** | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | NA | NA | | | | | | |
| | | INDENO(1,2,3-CD)PYRENE | NA | NA | | | | | | |
| | | **Total Hazards - Surface Water** | **6.6E-01** | | **3.5E-01** | | **NA** | | **7.6E-01** | |
| | | **Total Hazards - Adolescent Swimmer** | **8E-01** | | **1E+00** | | **NA** | | **1E+00** | |
| Child Swimmer | Sediment | **Metals** | | | | | | | | |
| | | ALUMINUM | 1.1E-02 | 1% | 5.6E-02 | 2% | | | 6.2E-02 | 4% |
| | | ANTIMONY | 2.2E-02 | 2% | 7.0E-02 | 2% | | | 2.0E-02 | 1% |
| | | ARSENIC | 8.4E-02 | **10%** | 2.4E+00 | **74%** | | | 7.6E-01 | **51%** |
| | | CADMIUM | | | 5.6E-02 | 2% | | | 3.2E-02 | 2% |
| | | CHROMIUM | 1.0E-03 | <1% | 9.9E-03 | <1% | | | 1.1E-02 | <1% |
| | | COBALT | 7.9E-02 | **9%** | 2.1E-01 | **6%** | | | 1.1E-01 | **7%** |
| | | COPPER | 9.7E-03 | 1% | 1.7E-02 | <1% | | | 2.0E-02 | 1% |
| | | CYANIDE | 1.7E-02 | 2% | 9.7E-02 | 3% | | | 2.6E-02 | 2% |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution |
| Child Swimmer | Sediment | IRON | 4.4E-02 | **5%** | 2.3E-01 | **7%** | | | 1.5E-01 | **10%** |
| | | LEAD | NA | NA | NA | NA | | | NA | NA |
| | | MANGANESE | 1.7E-02 | 2% | 1.8E-02 | <1% | | | 2.3E-02 | 2% |
| | | NICKEL | | | | | | | 7.0E-03 | <1% |
| | | THALLIUM | 3.3E-01 | **38%** | | | | | 1.8E-01 | **12%** |
| | | VANADIUM | | | 4.3E-02 | 1% | | | 2.0E-02 | 1% |
| | | ZINC | | | 1.4E-02 | <1% | | | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | 1.7E-02 | 2% | 2.0E-02 | <1% | | | 4.2E-02 | 3% |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | NA | NA | NA | NA | | | NA | NA |
| | | BENZO(A)PYRENE | 2.5E-01 | **28%** | 2.3E-02 | <1% | | | 1.8E-02 | 1% |
| | | BENZO(B)FLUORANTHENE | NA | NA | NA | NA | | | NA | NA |
| | | BENZO(K)FLUORANTHENE | NA | NA | NA | NA | | | NA | NA |
| | | CHRYSENE | NA | NA | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | NA | NA | NA | NA | | | NA | NA |
| | | INDENO(1,2,3-CD)PYRENE | NA | NA | NA | NA | | | NA | NA |
| | | NAPHTHALENE | | | 7.1E-04 | <1% | | | | |
| | | **VOCs** | | | | | | | | |
| | | TRICHLOROETHYLENE (TCE) | | | 5.1E-04 | <1% | | | | |
| | | **TICs** | | | | | | | | |
| | | BENZO[J]FLUORANTHENE | NA | NA | | | | | | |
| | | **Total Hazards - Sediment** | **8.8E-01** | | **3.3E+00** | | **NA** | | **1.5E+00** | |
| Child Swimmer | Surface Water | **Metals** | | | | | | | | |
| | | ALUMINUM | | | 8.5E-03 | <1% | | | 9.1E-03 | <1% |
| | | ANTIMONY | | | 2.5E-02 | 1% | | | 7.9E-02 | 2% |
| | | ARSENIC | 1.7E-01 | **11%** | 6.8E-01 | **37%** | | | 3.7E-01 | **8%** |
| | | CADMIUM | | | 1.6E-02 | <1% | | | | |
| | | CHROMIUM | 1.7E-02 | 1% | 2.9E-02 | 2% | | | 3.5E-02 | <1% |
| | | COBALT | 4.6E-02 | 3% | 2.2E-02 | 1% | | | 3.4E-02 | <1% |
| | | CYANIDE | 4.9E-02 | 3% | 2.2E-02 | 1% | | | 2.0E-02 | <1% |
| | | IRON | 1.1E-01 | **7%** | 6.2E-02 | 3% | | | 3.4E-02 | <1% |
| | | LEAD | | | NA | NA | | | NA | NA |
| | | MANGANESE | 5.8E-01 | **36%** | 4.3E-02 | 2% | | | 4.9E-02 | 1% |
| | | THALLIUM | | | 8.2E-01 | **45%** | | | 3.8E+00 | **86%** |
| | | VANADIUM | | | 9.4E-03 | <1% | | | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | NA | NA | | | | | | |
| | | BENZO(A)PYRENE | 4.5E-01 | **28%** | 7.6E-02 | 4% | | | | |
| | | BENZO(B)FLUORANTHENE | NA | NA | | | | | | |
| | | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-01 | **12%** | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | NA | NA | | | | | | |
| | | INDENO(1,2,3-CD)PYRENE | NA | NA | | | | | | |
| | | **Total Hazards - Surface Water** | **1.6E+00** | | **1.8E+00** | | **NA** | | **4.5E+00** | |
| | | **Total Hazards - Child Swimmer** | **2E+00** | | **5E+00** | | **NA** | | **6E+00** | |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution |
| Adult Angler | Tissue | **Metals** | | | | | | | | |
| | | ARSENIC | | | | | | | 1.1E-02 | <1% |
| | | CHROMIUM | | | | | | | 2.3E-02 | 2% |
| | | LEAD | | | | | | | NA | NA |
| | | **PEST/PCB** | | | | | | | | |
| | | 4,4'-DDD | | | | | | | 1.3E-01 | **9%** |
| | | 4,4'-DDE | | | | | | | 1.7E-02 | 1% |
| | | AROCLOR-1254 | | | | | | | 8.7E-01 | **62%** |
| | | AROCLOR-1260 | | | | | | | 3.6E-01 | **26%** |
| | | **Total Risks - Fish Tissue** | | | | | | | **1.4E+00** | |
| | | **Total Risks - Adult Angler** | | | | | | | **1E+00** | |
| Adolescent Angler | Tissue | **Metals** | | | | | | | | |
| | | ARSENIC | | | | | | | 1.3E-02 | <1% |
| | | CHROMIUM | | | | | | | 2.8E-02 | 2% |
| | | LEAD | | | | | | | NA | NA |
| | | **PEST/PCB** | | | | | | | | |
| | | 4,4'-DDD | | | | | | | 1.5E-01 | **9%** |
| | | 4,4'-DDE | | | | | | | 2.0E-02 | 1% |
| | | AROCLOR-1254 | | | | | | | 1.0E+00 | **62%** |
| | | AROCLOR-1260 | | | | | | | 4.3E-01 | **26%** |
| | | **Total Risks - Fish Tissue** | | | | | | | **1.7E+00** | |
| | | **Total Risks - Adolescent Angler** | | | | | | | **2E+00** | |
| Child Angler | Tissue | **Metals** | | | | | | | | |
| | | ARSENIC | | | | | | | 2.0E-02 | <1% |
| | | CHROMIUM | | | | | | | 4.3E-02 | 2% |
| | | LEAD | | | | | | | NA | NA |
| | | **PEST/PCB** | | | | | | | | |
| | | 4,4'-DDD | | | | | | | 2.4E-01 | **9%** |
| | | 4,4'-DDE | | | | | | | 3.1E-02 | 1% |
| | | AROCLOR-1254 | | | | | | | 1.6E+00 | **62%** |
| | | AROCLOR-1260 | | | | | | | 6.7E-01 | **26%** |
| | | **Total Risks - Fish Tissue** | | | | | | | **2.6E+00** | |
| | | **Total Risks - Child Angler** | | | | | | | **3E+00** | |

Notes:

NA – Not Applicable.

**BOLD, Shaded – Percentage contribution for specific medium, receptor, and exposure area ≥5%.**

# Appendix C-2

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## Risk Calculations for 100% Chromium Analysis

## Appendix C-2 Table Index

| Table | Title | Media | Exposure Area |
|---|---|---|---|
| 3.1 | Exposure Point Concentrations – Reasonable Maximum Exposure | Soil (0-2 ft bgs) | HC, BWL, KWL |
| 3.2 | Exposure Point Concentrations – Reasonable Maximum Exposure | Soil Particulates/Volatiles in Air | HC, BWL, KWL |
| 3.3 | Exposure Point Concentrations – Reasonable Maximum Exposure | Sediment (0-0.5 ft bgs) | All Areas |
| 3.7 | Exposure Point Concentrations – Reasonable Maximum Exposure | Fish | KWL |
| 7.1 | Calculation of Chemical Cancer Risks for Recreator (Adult) | All | All Areas |
| 7.2 | Calculation of Chemical Cancer Risks for Recreator (Adolescent) | All | All Areas |
| 7.3 | Calculation of Chemical Cancer Risks for Recreator (Child) | All | All Areas |
| 7.4 | Calculation of Chemical Cancer Risks for Swimmer (Adult) | SD, SW | SL, BWL, KWL |
| 7.5 | Calculation of Chemical Cancer Risks for Swimmer (Adolescent) | SD, SW | SL, BWL, KWL |
| 7.6 | Calculation of Chemical Cancer Risks for Swimmer (Child) | SD, SW | SL, BWL, KWL |
| 7.7 | Calculation of Chemical Cancer Risks for Angler (Adult) | Fish | KWL |
| 7.8 | Calculation of Chemical Cancer Risks for Angler (Adolescent) | Fish | KWL |
| 7.9 | Calculation of Chemical Cancer Risks for Angler (Child) | Fish | KWL |
| 7.10 | Calculation of Chemical Non-cancer Hazards for Recreator (Adult) | All | All Areas |
| 7.11 | Calculation of Chemical Non-cancer Hazards for Recreator (Adolescent) | All | All Areas |
| 7.12 | Calculation of Chemical Non-cancer Hazards for Recreator (Child) | All | All Areas |
| 7.13 | Calculation of Chemical Non-cancer Hazards for Swimmer (Adult) | SD, SW | SL, BWL, KWL |
| 7.14 | Calculation of Chemical Non-cancer Hazards for Swimmer (Adolescent) | SD, SW | SL, BWL, KWL |
| 7.15 | Calculation of Chemical Non-cancer Hazards for Swimmer (Child) | SD, SW | SL, BWL, KWL |
| 7.16 | Calculation of Chemical Non-cancer Hazards for Angler (Adult) | Fish | KWL |
| 7.17 | Calculation of Chemical Non-cancer Hazards for Angler (Adolescent) | Fish | KWL |
| 7.18 | Calculation of Chemical Non-cancer Hazards for Angler (Child) | Fish | KWL |
| 9.1 | Chemical Cancer Risks and Non-cancer Hazards – Recreator - Adult | All | All Areas |
| 9.2 | Chemical Cancer Risks and Non-cancer Hazards – Recreator - Adolescent | All | All Areas |
| 9.3 | Chemical Cancer Risks and Non-cancer Hazards – Recreator - Child | All | All Areas |
| 9.4 | Chemical Cancer Risks and Non-cancer Hazards – Swimmer - Adult | SD, SW | SL, BWL, KWL |
| 9.5 | Chemical Cancer Risks and Non-cancer Hazards – Swimmer - Adolescent | SD, SW | SL, BWL, KWL |
| 9.6 | Chemical Cancer Risks and Non-cancer Hazards – Swimmer - Child | SD, SW | SL, BWL, KWL |
| 9.7 | Chemical Cancer Risks and Non-cancer Hazards – Angler - Adult | Fish | KWL |
| 9.8 | Chemical Cancer Risks and Non-cancer Hazards – Angler - Adolescent | Fish | KWL |
| 9.9 | Chemical Cancer Risks and Non-cancer Hazards – Angler - Child | Fish | KWL |
| 10.1 | Risk Assessment Summary – Reasonable Maximum Exposure (Recreator - Adult) | All | All Areas |
| 10.2 | Risk Assessment Summary – Reasonable Maximum Exposure (Recreator - Adolescent) | All | All Areas |
| 10.3 | Risk Assessment Summary – Reasonable Maximum Exposure (Recreator - Child) | All | All Areas |
| 10.4 | Risk Assessment Summary – Reasonable Maximum Exposure (Swimmer - Adult) | SD, SW | SL, BWL, KWL |
| 10.5 | Risk Assessment Summary – Reasonable Maximum Exposure (Swimmer - Adolescent) | SD, SW | SL, BWL, KWL |
| 10.6 | Risk Assessment Summary – Reasonable Maximum Exposure (Swimmer - Child) | SD, SW | SL, BWL, KWL |
| 10.7 | Risk Assessment Summary – Reasonable Maximum Exposure (Angler - Adult) | Fish | KWL |
| 10.8 | Risk Assessment Summary – Reasonable Maximum Exposure (Angler - Adolescent) | Fish | KWL |
| 10.9 | Risk Assessment Summary – Reasonable Maximum Exposure (Angler - Child) | Fish | KWL |
| 11 | Summary of Total Cancer Risks and Non-cancer Hazards by Exposure Area | All | All Areas |
| 12 | Risk Summary Detail | All | All Areas |
| 13 | Risk Summary Detail by Media | All | All Areas |
| 14.1 | Cancer Risk and Percentage Contribution by Medium for Each Receptor and Exposure Area | All | All Areas |
| 14.2 | Non-cancer Hazard and Percentage Contribution by Medium for Each Receptor and Exposure Area | All | All Areas |

| Exposure Areas |
|---|
| SL – Silver Lake |
| BWL – Bridgewood Lake |
| HC – Lower and Middle Hilliards Creek |
| KWL – Kirkwood Lake |

**Table 3.1**
**Exposure Point Concentrations**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Soil |
| Exposure Medium: | Surface Soil (0-2 ft bgs) |

| Exposure Point | Chemical Group | Chemical of Potential Concern | Units | Arithmetic Mean | 95% UCLM | Maximum Concentration | Exposure Point Concentration | Statistic/Rationale | Note |
|---|---|---|---|---|---|---|---|---|---|
| BWL | METALS | ALUMINUM | mg/kg | 2378 | 3803 | 9480 | 3803 | 95% Chebyshev (Mean, Sd) UCL | |
| BWL | METALS | ANTIMONY | mg/kg | 1.1 | 1.4 | 13 | 1.4 | 95% KM (t) UCL | |
| BWL | METALS | ARSENIC | mg/kg | 30 | 115 | 1110 | 115 | 95% KM (Chebyshev) UCL | |
| BWL | METALS | CADMIUM | mg/kg | 0.77 | 2.3 | 18 | 2.3 | 95% KM (Chebyshev) UCL | |
| BWL | METALS | CHROMIUM | mg/kg | 16 | 40 | 280 | 40.3 | 95% Chebyshev (Mean, Sd) UCL | (a) |
| BWL | METALS | COBALT | mg/kg | 0.87 | 1.1 | 4.8 | 1.1 | 95% KM (t) UCL | |
| BWL | METALS | CYANIDE | mg/kg | 0.39 | 0.60 | 4.3 | 0.60 | 95% KM (t) UCL | |
| BWL | METALS | IRON | mg/kg | 4879 | 6261 | 26400 | 6261 | 95% Adjusted Gamma UCL | |
| BWL | METALS | LEAD | mg/kg | 188 | 465 | 3310 | 188 | Arithmetic Mean | |
| BWL | METALS | THALLIUM | mg/kg | 0.95 | 0.85 | 2.3 | 0.85 | 95% KM (t) UCL | |
| BWL | METALS | VANADIUM | mg/kg | 9.5 | 12 | 40 | 12 | 90% Chebyshev (MVUE) UCL | |
| BWL | SVOC | BENZO(A)PYRENE | mg/kg | 0.19 | 0.14 | 0.23 | 0.14 | 95% KM (t) UCL | |
| HC | METALS | ALUMINUM | mg/kg | 7321 | 9199 | 52100 | 9199 | 95% Chebyshev (Mean, Sd) UCL | |
| HC | METALS | ANTIMONY | mg/kg | 4.0 | 5.3 | 208 | 5.3 | 95% KM (t) UCL | |
| HC | METALS | ARSENIC | mg/kg | 275 | 497 | 4880 | 497 | 97.5% KM (Chebyshev) UCL | |
| HC | METALS | BARIUM | mg/kg | 1172 | 1943 | 22600 | 1943 | 95% Chebyshev (Mean, Sd) UCL | |
| HC | METALS | CADMIUM | mg/kg | 2.1 | 2.9 | 28 | 2.9 | 95% KM (Chebyshev) UCL | |
| HC | METALS | CHROMIUM | mg/kg | 396 | 643 | 10100 | 643.0 | 95% Chebyshev (Mean, Sd) UCL | (a) |
| HC | METALS | COBALT | mg/kg | 4.6 | 6.3 | 48 | 6.3 | 95% KM (Chebyshev) UCL | |
| HC | METALS | COPPER | mg/kg | 87 | 143 | 1700 | 143 | 97.5% KM (Chebyshev) UCL | |
| HC | METALS | CYANIDE | mg/kg | 25 | 49 | 495 | 49 | 97.5% KM (Chebyshev) UCL | |
| HC | METALS | IRON | mg/kg | 20952 | 27559 | 194000 | 27559 | 95% Chebyshev (Mean, Sd) UCL | |
| HC | METALS | LEAD | mg/kg | 3273 | 5901 | 114000 | 3273 | Arithmetic Mean | |
| HC | METALS | MANGANESE | mg/kg | 225 | 339 | 3910 | 339 | 95% Chebyshev (Mean, Sd) UCL | |
| HC | METALS | MERCURY | mg/kg | 0.54 | 0.77 | 9.3 | 0.77 | 95% KM (Chebyshev) UCL | |
| HC | METALS | NICKEL | mg/kg | 9.7 | 14 | 214 | 14 | 95% KM (Chebyshev) UCL | |
| HC | METALS | THALLIUM | mg/kg | 0.92 | 0.66 | 4.3 | 0.66 | 95% KM (t) UCL | |
| HC | METALS | VANADIUM | mg/kg | 25 | 30 | 114 | 30 | 95% Chebyshev (Mean, Sd) UCL | |
| HC | METALS | ZINC | mg/kg | 334 | 532 | 4900 | 532 | 97.5% KM (Chebyshev) UCL | |
| HC | PEST/PCB | AROCLOR-1254 | mg/kg | 0.068 | 0.055 | 1.4 | 0.055 | 95% KM (t) UCL | |
| HC | PEST/PCB | AROCLOR-1260 | mg/kg | 0.14 | 0.17 | 1.6 | 0.17 | 95% KM (t) UCL | |
| HC | SVOC | BENZO(A)ANTHRACENE | mg/kg | 0.81 | 1.6 | 29 | 1.6 | 97.5% KM (Chebyshev) UCL | |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Soil |
| Exposure Medium: | Surface Soil (0-2 ft bgs) |

| Exposure Point | Chemical Group | Chemical of Potential Concern | Units | Arithmetic Mean | 95% UCLM | Maximum Concentration | Exposure Point Concentration | Statistic/Rationale | Note |
|---|---|---|---|---|---|---|---|---|---|
| HC | SVOC | BENZO(A)PYRENE | mg/kg | 0.91 | 1.8 | 29 | 1.8 | 97.5% KM (Chebyshev) UCL | |
| HC | SVOC | BENZO(B)FLUORANTHENE | mg/kg | 1.1 | 2.0 | 29 | 2.0 | 97.5% KM (Chebyshev) UCL | |
| HC | SVOC | BENZO(K)FLUORANTHENE | mg/kg | 0.95 | 1.8 | 27 | 1.8 | 97.5% KM (Chebyshev) UCL | |
| HC | SVOC | DIBENZO(A,H)ANTHRACENE | mg/kg | 0.36 | 0.30 | 2.8 | 0.30 | 95% KM (Chebyshev) UCL | |
| HC | SVOC | INDENO(1,2,3-CD)PYRENE | mg/kg | 0.52 | 0.77 | 7.0 | 0.77 | 97.5% KM (Chebyshev) UCL | |
| HC | SVOC | NAPHTHALENE | mg/kg | 0.50 | 0.27 | 15 | 0.27 | 95% KM (BCA) UCL | |
| KWL | METALS | ALUMINUM | mg/kg | 3222 | 4586 | 14200 | 4586 | 90% Chebyshev (MVUE) UCL | |
| KWL | METALS | ANTIMONY | mg/kg | 2.8 | 3.6 | 29 | 3.6 | 95% KM (t) UCL | |
| KWL | METALS | ARSENIC | mg/kg | 6.3 | 8.4 | 25 | 8.4 | 95% KM (BCA) UCL | |
| KWL | METALS | CHROMIUM | mg/kg | 14 | 18 | 66 | 18.4 | 95% Adjusted Gamma UCL | (a) |
| KWL | METALS | COBALT | mg/kg | 1.2 | 0.87 | 3.6 | 0.87 | 95% KM (t) UCL | |
| KWL | METALS | CYANIDE | mg/kg | 0.27 | 0.37 | 2.7 | 0.37 | 95% KM (BCA) UCL | |
| KWL | METALS | IRON | mg/kg | 6079 | 7843 | 21500 | 7843 | 95% Adjusted Gamma UCL | |
| KWL | METALS | LEAD | mg/kg | 213 | 380 | 1680 | 213 | Arithmetic Mean | |
| KWL | METALS | THALLIUM | mg/kg | 1.1 | NA | 0.44 | 0.44 | Maximum Concentration | |
| KWL | SVOC | BENZO(A)PYRENE | mg/kg | 0.16 | 0.13 | 0.33 | 0.13 | 95% KM (t) UCL | |
| KWL | SVOC | BENZO(B)FLUORANTHENE | mg/kg | 0.16 | 0.26 | 0.99 | 0.26 | 95% KM (Chebyshev) UCL | |

Notes:

Only chemicals identified as COPCs are presented.

NA – The 95% UCLM could not be calculated using ProUCL because there were not enough detected values.

(a) Chromium is assumed to be 100% hexavalent chromium, and therefore the EPC was not adjusted as was done in Appendix C-1.

**Table 3.2**
**Exposure Point Concentrations**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Soil (0-2 ft bgs) |
| Exposure Medium: | Soil Particulates/Volatiles in Air |

| Exposure Point | Chemical Group | Chemical of Potential Concern | Soil Exposure Point Concentration ($EPC_{soil}$) (mg/kg) | Volatilization Factor (VF) ($m^3/kg$) | Modeled Air Concentration ($EPC_{air}$) ($mg/m^3$) |
|---|---|---|---|---|---|
| BWL | METALS | ALUMINUM | 3803 | - | 1.2E-06 |
| BWL | METALS | ANTIMONY | 1.4 | - | 4.4E-10 |
| BWL | METALS | ARSENIC | 115 | - | 3.6E-08 |
| BWL | METALS | CADMIUM | 2.3 | - | 7.1E-10 |
| BWL | METALS | CHROMIUM | 40.3 | - | 1.2E-08 |
| BWL | METALS | COBALT | 1.1 | - | 3.4E-10 |
| BWL | METALS | CYANIDE | 0.60 | 75,481 | 7.9E-06 |
| BWL | METALS | IRON | 6261 | - | 1.9E-06 |
| BWL | METALS | LEAD | 188 | - | 5.8E-08 |
| BWL | METALS | THALLIUM | 0.85 | - | 2.6E-10 |
| BWL | METALS | VANADIUM | 12 | - | 3.9E-09 |
| BWL | SVOC | BENZO(A)PYRENE | 0.14 | - | 4.2E-11 |
| HC | METALS | ALUMINUM | 9199 | - | 2.8E-06 |
| HC | METALS | ANTIMONY | 5.3 | - | 1.6E-09 |
| HC | METALS | ARSENIC | 497 | - | 1.5E-07 |
| HC | METALS | BARIUM | 1943 | - | 6.0E-07 |
| HC | METALS | CADMIUM | 2.9 | - | 9.0E-10 |
| HC | METALS | CHROMIUM | 643 | - | 2.0E-07 |
| HC | METALS | COBALT | 6.3 | - | 1.9E-09 |
| HC | METALS | COPPER | 143 | - | 4.4E-08 |
| HC | METALS | CYANIDE | 49 | 75,481 | 6.5E-04 |
| HC | METALS | IRON | 27559 | - | 8.5E-06 |
| HC | METALS | LEAD | 3273 | - | 1.0E-06 |
| HC | METALS | MANGANESE | 339 | - | 1.0E-07 |
| HC | METALS | MERCURY | 0.77 | - | 2.4E-10 |
| HC | METALS | NICKEL | 14 | - | 4.2E-09 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Soil (0-2 ft bgs) |
| Exposure Medium: | Soil Particulates/Volatiles in Air |

| Exposure Point | Chemical Group | Chemical of Potential Concern | Soil Exposure Point Concentration ($EPC_{soil}$) (mg/kg) | Volatilization Factor (VF) ($m^3/kg$) | Modeled Air Concentration ($EPC_{air}$) ($mg/m^3$) |
|---|---|---|---|---|---|
| HC | METALS | THALLIUM | 0.66 | - | 2.0E-10 |
| HC | METALS | VANADIUM | 30 | - | 9.4E-09 |
| HC | METALS | ZINC | 532 | - | 1.6E-07 |
| HC | PEST/PCB | AROCLOR-1254 | 0.055 | 1,080,012 | 5.1E-08 |
| HC | PEST/PCB | AROCLOR-1260 | 0.17 | 1,684,174 | 9.8E-08 |
| HC | SVOC | BENZO(A)ANTHRACENE | 1.6 | 5,652,776 | 2.8E-07 |
| HC | SVOC | BENZO(A)PYRENE | 1.8 | - | 5.4E-10 |
| HC | SVOC | BENZO(B)FLUORANTHENE | 2.0 | - | 6.2E-10 |
| HC | SVOC | BENZO(K)FLUORANTHENE | 1.8 | - | 5.7E-10 |
| HC | SVOC | DIBENZO(A,H)ANTHRACENE | 0.30 | - | 9.2E-11 |
| HC | SVOC | INDENO(1,2,3-CD)PYRENE | 0.77 | - | 2.4E-10 |
| HC | SVOC | NAPHTHALENE | 0.27 | 59,369 | 4.5E-06 |
| KWL | METALS | ALUMINUM | 4586 | - | 1.4E-06 |
| KWL | METALS | ANTIMONY | 3.6 | - | 1.1E-09 |
| KWL | METALS | ARSENIC | 8.4 | - | 2.6E-09 |
| KWL | METALS | CHROMIUM | 18.43 | - | 5.7E-09 |
| KWL | METALS | COBALT | 0.87 | - | 2.7E-10 |
| KWL | METALS | CYANIDE | 0.37 | 75,481 | 4.9E-06 |
| KWL | METALS | IRON | 7843 | - | 2.4E-06 |
| KWL | METALS | LEAD | 213 | - | 6.6E-08 |
| KWL | METALS | THALLIUM | 0.44 | - | 1.4E-10 |
| KWL | SVOC | BENZO(A)PYRENE | 0.13 | - | 3.9E-11 |
| KWL | SVOC | BENZO(B)FLUORANTHENE | 0.26 | - | 7.9E-11 |

Notes:

Only chemicals identified as COPCs in soil (0-2 ft) are presented.

$EPC_{air} = EPC_{soil} \times (1/VF + 1/PEF)$

| | | |
|---|---|---|
| Volatilization Factor (VF) ($m^3/kg$) = | Chemical-specific | Based on values for Philadelphia (US EPA, 2017a). |
| Particulate Emissions Factor (PEF) ($m^3/kg$) = | 3.2E+09 | Default value for Philadelphia (US EPA, 1996, 2017a). |

**Table 3.3**
**Exposure Point Concentrations**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Sediment |
| Exposure Medium: | Sediment (0-0.5 ft bgs) |

| Exposure Point | Chemical Group | Chemical of Potential Concern | Units | Arithmetic Mean | 95% UCLM | Maximum Concentration | Exposure Point Concentration | Statistic/Rationale | Note |
|---|---|---|---|---|---|---|---|---|---|
| SL | METALS | ALUMINUM | mg/kg | 2301 | 2991 | 10900 | 2991 | 95% Adjusted Gamma UCL | |
| SL | METALS | ANTIMONY | mg/kg | 3.2 | 2.3 | 3.6 | 2.3 | 95% KM (t) UCL | |
| SL | METALS | ARSENIC | mg/kg | 5.3 | 9.8 | 28 | 9.8 | 95% KM (Chebyshev) UCL | |
| SL | METALS | CHROMIUM | mg/kg | 12 | 16 | 53 | 16.0 | 95% Adjusted Gamma UCL | (a) |
| SL | METALS | COBALT | mg/kg | 3.3 | 6.2 | 15 | 6.2 | 95% KM (Chebyshev) UCL | |
| SL | METALS | COPPER | mg/kg | 41 | 101 | 360 | 101 | 95% Chebyshev (Mean, Sd) UCL | |
| SL | METALS | CYANIDE | mg/kg | 1.2 | 2.7 | 7.9 | 2.7 | 97.5% KM (Chebyshev) UCL | |
| SL | METALS | IRON | mg/kg | 5783 | 8020 | 22000 | 8020 | 95% Adjusted Gamma UCL | |
| SL | METALS | LEAD | mg/kg | 170 | 406 | 1630 | 170 | Arithmetic Mean | |
| SL | METALS | MANGANESE | mg/kg | 74 | 109 | 397 | 109 | 95% Adjusted Gamma UCL | |
| SL | METALS | THALLIUM | mg/kg | 1.7 | 0.86 | 6.4 | 0.86 | 95% KM (t) UCL | |
| SL | PEST/PCB | AROCLOR-1254 | mg/kg | 0.041 | 0.065 | 0.23 | 0.065 | 95% KM (t) UCL | |
| SL | SVOC | BENZO(A)ANTHRACENE | mg/kg | 2.4 | 20 | 57 | 20 | 99% KM (Chebyshev) UCL | |
| SL | SVOC | BENZO(A)PYRENE | mg/kg | 2.6 | 15 | 63 | 15 | 97.5% Chebyshev (Mean, Sd) UCL | |
| SL | SVOC | BENZO(B)FLUORANTHENE | mg/kg | 4.9 | 30 | 130 | 30 | 97.5% Chebyshev (Mean, Sd) UCL | |
| SL | SVOC | BENZO(K)FLUORANTHENE | mg/kg | 0.92 | 6.3 | 16 | 6.3 | 99% KM (Chebyshev) UCL | |
| SL | SVOC | CHRYSENE | mg/kg | 3.5 | 30 | 86 | 30 | 99% KM (Chebyshev) UCL | |
| SL | SVOC | DIBENZO(A,H)ANTHRACENE | mg/kg | 0.21 | 1.5 | 4.1 | 1.5 | 99% KM (Chebyshev) UCL | |
| SL | SVOC | INDENO(1,2,3-CD)PYRENE | mg/kg | 0.56 | 4.1 | 11 | 4.1 | 99% KM (Chebyshev) UCL | |
| SL | TIC | BENZO[J]FLUORANTHENE | mg/kg | 5.6 | 15 | 12 | 12 | Maximum Concentration | |
| BWL | METALS | ALUMINUM | mg/kg | 13022 | 14676 | 28000 | 14676 | 95% Student's-t UCL | |
| BWL | METALS | ANTIMONY | mg/kg | 6.3 | 7.3 | 38 | 7.3 | 95% KM (t) UCL | |
| BWL | METALS | ARSENIC | mg/kg | 242 | 284 | 1070 | 284 | 95% Student's-t UCL | |
| BWL | METALS | CADMIUM | mg/kg | 11 | 13 | 39 | 13 | 95% KM (t) UCL | |
| BWL | METALS | CHROMIUM | mg/kg | 108 | 155 | 395 | 155 | 95% Chebyshev (Mean, Sd) UCL | (a) |
| BWL | METALS | COBALT | mg/kg | 12 | 17 | 34 | 17 | 95% KM (Chebyshev) UCL | |
| BWL | METALS | COPPER | mg/kg | 141 | 176 | 566 | 176 | 95% Approximate Gamma UCL | |
| BWL | METALS | CYANIDE | mg/kg | 7.5 | 15 | 198 | 15 | 95% KM (BCA) UCL | |
| BWL | METALS | IRON | mg/kg | 34653 | 42168 | 163000 | 42168 | 95% Approximate Gamma UCL | |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Sediment |
| Exposure Medium: | Sediment (0-0.5 ft bgs) |

| Exposure Point | Chemical Group | Chemical of Potential Concern | Units | Arithmetic Mean | 95% UCLM | Maximum Concentration | Exposure Point Concentration | Statistic/Rationale | Note |
|---|---|---|---|---|---|---|---|---|---|
| BWL | METALS | LEAD | mg/kg | 1485 | 1742 | 5840 | 1485 | Arithmetic Mean | |
| BWL | METALS | MANGANESE | mg/kg | 91 | 110 | 569 | 110 | 95% Approximate Gamma UCL | |
| BWL | METALS | VANADIUM | mg/kg | 42 | 56 | 79 | 56 | 95% KM (Chebyshev) UCL | |
| BWL | METALS | ZINC | mg/kg | 969 | 1119 | 2540 | 1119 | 95% Student's-t UCL | |
| BWL | PEST/PCB | AROCLOR-1254 | mg/kg | 0.11 | 0.080 | 0.38 | 0.080 | 95% KM (t) UCL | |
| BWL | SVOC | BENZO(A)ANTHRACENE | mg/kg | 0.71 | 1.3 | 6.5 | 1.3 | 95% KM (Chebyshev) UCL | |
| BWL | SVOC | BENZO(A)PYRENE | mg/kg | 0.81 | 1.4 | 6.2 | 1.4 | 95% KM (Chebyshev) UCL | |
| BWL | SVOC | BENZO(B)FLUORANTHENE | mg/kg | 1.1 | 2.0 | 9.9 | 2.0 | 95% KM (Chebyshev) UCL | |
| BWL | SVOC | BENZO(K)FLUORANTHENE | mg/kg | 1.0 | 2.0 | 9.7 | 2.0 | 95% KM (Chebyshev) UCL | |
| BWL | SVOC | DIBENZO(A,H)ANTHRACENE | mg/kg | 0.68 | 0.29 | 1.0 | 0.29 | 95% KM (t) UCL | |
| BWL | SVOC | INDENO(1,2,3-CD)PYRENE | mg/kg | 0.47 | 0.75 | 3.8 | 0.75 | 95% KM (Chebyshev) UCL | |
| BWL | SVOC | NAPHTHALENE | mg/kg | 1.3 | 2.8 | 25 | 2.8 | 95% KM (Chebyshev) UCL | |
| BWL | VOC | TRICHLOROETHYLENE (TCE) | mg/kg | 0.071 | 0.067 | 0.50 | 0.067 | 95% KM (t) UCL | |
| HC | METALS | ALUMINUM | mg/kg | 7300 | 8312 | 30900 | 8312 | 95% Approximate Gamma UCL | |
| HC | METALS | ANTIMONY | mg/kg | 2.5 | 2.5 | 17 | 2.5 | 95% KM (t) UCL | |
| HC | METALS | ARSENIC | mg/kg | 187 | 386 | 4460 | 386 | 95% KM (Chebyshev) UCL | |
| HC | METALS | BARIUM | mg/kg | 558 | 1005 | 7950 | 1005 | 95% Chebyshev (Mean, Sd) UCL | |
| HC | METALS | CADMIUM | mg/kg | 3.1 | 4.5 | 17 | 4.5 | 95% KM (Chebyshev) UCL | |
| HC | METALS | CHROMIUM | mg/kg | 247 | 441 | 3430 | 440.6 | 95% Chebyshev (Mean, Sd) UCL | (a) |
| HC | METALS | COBALT | mg/kg | 3.8 | 5.0 | 14 | 5.0 | 95% KM (Chebyshev) UCL | |
| HC | METALS | COPPER | mg/kg | 111 | 170 | 1400 | 170 | 90% Chebyshev (MVUE) UCL | |
| HC | METALS | CYANIDE | mg/kg | 18 | 48 | 360 | 48 | 97.5% KM (Chebyshev) UCL | |
| HC | METALS | IRON | mg/kg | 13108 | 17121 | 46200 | 17121 | 95% Chebyshev (Mean, Sd) UCL | |
| HC | METALS | LEAD | mg/kg | 2860 | 4802 | 39200 | 2860 | Arithmetic Mean | |
| HC | METALS | MANGANESE | mg/kg | 72 | 81 | 323 | 81 | 95% Approximate Gamma UCL | |
| HC | METALS | NICKEL | mg/kg | 14 | 33 | 549 | 33 | 95% Chebyshev (Mean, Sd) UCL | |
| HC | METALS | THALLIUM | mg/kg | 2.1 | 1.6 | 9.9 | 1.6 | 95% KM (t) UCL | |
| HC | METALS | VANADIUM | mg/kg | 18 | 24 | 81 | 24 | 95% Chebyshev (Mean, Sd) UCL | |
| HC | METALS | ZINC | mg/kg | 324 | 486 | 2770 | 486 | 90% Chebyshev (MVUE) UCL | |
| HC | PEST/PCB | AROCLOR-1254 | mg/kg | 0.11 | 0.14 | 1.3 | 0.14 | 95% KM (t) UCL | |
| HC | PEST/PCB | AROCLOR-1260 | mg/kg | 0.056 | 0.058 | 0.29 | 0.058 | 95% KM (t) UCL | |
| HC | SVOC | BENZO(A)ANTHRACENE | mg/kg | 0.60 | 0.71 | 6.0 | 0.71 | 95% KM (BCA) UCL | |
| HC | SVOC | BENZO(A)PYRENE | mg/kg | 0.60 | 0.70 | 5.0 | 0.70 | 95% KM (BCA) UCL | |
| HC | SVOC | BENZO(B)FLUORANTHENE | mg/kg | 0.69 | 0.95 | 4.6 | 0.95 | 95% KM (Chebyshev) UCL | |
| HC | SVOC | DIBENZO(A,H)ANTHRACENE | mg/kg | 0.37 | 0.19 | 1.3 | 0.19 | 95% KM (t) UCL | |
| HC | SVOC | INDENO(1,2,3-CD)PYRENE | mg/kg | 0.37 | 0.39 | 2.6 | 0.39 | 95% KM (BCA) UCL | |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Sediment |
| Exposure Medium: | Sediment (0-0.5 ft bgs) |

| Exposure Point | Chemical Group | Chemical of Potential Concern | Units | Arithmetic Mean | 95% UCLM | Maximum Concentration | Exposure Point Concentration | Statistic/Rationale | Note |
|---|---|---|---|---|---|---|---|---|---|
| KWL | METALS | ALUMINUM | mg/kg | 13988 | 16110 | 44100 | 16110 | 95% Approximate Gamma UCL | |
| KWL | METALS | ANTIMONY | mg/kg | 2.3 | 2.0 | 17 | 2.0 | 95% KM (t) UCL | |
| KWL | METALS | ARSENIC | mg/kg | 67 | 88 | 277 | 88 | 95% Chebyshev (Mean, Sd) UCL | |
| KWL | METALS | CADMIUM | mg/kg | 5.2 | 7.7 | 16 | 7.7 | 97.5% KM (Chebyshev) UCL | |
| KWL | METALS | CHROMIUM | mg/kg | 127 | 173 | 696 | 172.5 | 95% Chebyshev (Mean, Sd) UCL | (a) |
| KWL | METALS | COBALT | mg/kg | 6.7 | 8.6 | 17 | 8.6 | 95% KM (Chebyshev) UCL | |
| KWL | METALS | COPPER | mg/kg | 154 | 209 | 462 | 209 | 95% Chebyshev (Mean, Sd) UCL | |
| KWL | METALS | CYANIDE | mg/kg | 2.8 | 4.1 | 72 | 4.1 | 95% KM (BCA) UCL | |
| KWL | METALS | IRON | mg/kg | 20906 | 26538 | 52700 | 26538 | 95% Chebyshev (Mean, Sd) UCL | |
| KWL | METALS | LEAD | mg/kg | 1015 | 1415 | 6720 | 1015 | Arithmetic Mean | |
| KWL | METALS | MANGANESE | mg/kg | 106 | 142 | 383 | 142 | 95% Chebyshev (Mean, Sd) UCL | |
| KWL | METALS | NICKEL | mg/kg | 21 | 37 | 471 | 37 | 95% KM (Chebyshev) UCL | |
| KWL | METALS | THALLIUM | mg/kg | 1.2 | 0.47 | 9.8 | 0.47 | 95% KM (t) UCL | |
| KWL | METALS | VANADIUM | mg/kg | 24 | 26 | 106 | 26 | 95% Approximate Gamma UCL | |
| KWL | PEST/PCB | AROCLOR-1254 | mg/kg | 0.17 | 0.16 | 0.51 | 0.16 | 95% KM (t) UCL | |
| KWL | SVOC | BENZO(A)ANTHRACENE | mg/kg | 0.55 | 1.1 | 15 | 1.1 | 95% KM (Chebyshev) UCL | |
| KWL | SVOC | BENZO(A)PYRENE | mg/kg | 0.61 | 1.1 | 11 | 1.1 | 95% KM (Chebyshev) UCL | |
| KWL | SVOC | BENZO(B)FLUORANTHENE | mg/kg | 0.75 | 1.4 | 15 | 1.4 | 95% KM (Chebyshev) UCL | |
| KWL | SVOC | BENZO(K)FLUORANTHENE | mg/kg | 0.73 | 1.2 | 11 | 1.2 | 95% KM (Chebyshev) UCL | |
| KWL | SVOC | DIBENZO(A,H)ANTHRACENE | mg/kg | 0.39 | 0.16 | 1.4 | 0.16 | 95% KM (t) UCL | |
| KWL | SVOC | INDENO(1,2,3-CD)PYRENE | mg/kg | 0.30 | 0.42 | 3.2 | 0.42 | 95% KM (Chebyshev) UCL | |

Notes:

Only chemicals identified as COPCs are presented.

NA – The 95% UCLM could not be calculated using ProUCL because there were not enough detected values.

(a) Chromium is assumed to be 100% hexavalent chromium, and therefore the EPC was not adjusted as was done in Appendix C-1.

**Table 3.7**
**Exposure Point Concentrations**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Medium: | Fish |
| Exposure Medium: | Tissue |

| Exposure Point | Chemical Group | Chemical of Potential Concern | Units | Arithmetic Mean | 95% UCLM | Maximum Concentration | Exposure Point Concentration | Statistic/Rationale | Note |
|---|---|---|---|---|---|---|---|---|---|
| KWL | Metals | ARSENIC | mg/kg | 0.090 | 0.10 | 0.23 | 0.01 | 95% KM Adjusted Gamma UCL | (a) |
| KWL | Metals | CHROMIUM | mg/kg | 2.1 | 4.3 | 15 | 4.32 | 95% KM (Chebyshev) UCL | (b) |
| KWL | Metals | LEAD | mg/kg | 0.11 | 0.16 | 1.0 | 0.11 | Arithmetic Mean | |
| KWL | PEST/PCB | 4,4'-DDD | mg/kg | 0.0056 | 0.012 | 0.042 | 0.012 | 95% KM (Chebyshev) UCL | |
| KWL | PEST/PCB | 4,4'-DDE | mg/kg | 0.010 | 0.015 | 0.063 | 0.015 | 90% Chebyshev (MVUE) UCL | |
| KWL | PEST/PCB | AROCLOR-1254 | mg/kg | 0.028 | 0.054 | 0.16 | 0.054 | 95% Chebyshev (Mean, Sd) UCL | |
| KWL | PEST/PCB | AROCLOR-1260 | mg/kg | 0.017 | 0.022 | 0.066 | 0.022 | 95% KM Adjusted Gamma UCL | |

Notes:

Only chemicals identified as COPCs are presented.

NA – Could not calculate using ProUCL because only detected in one sample.

(a) The arsenic EPC is calculated by multiplying the arsenic UCLM by 10%, on the assumption that 10% of the total arsenic in fish is inorganic.

(b) Chromium is assumed to be 100% hexavalent chromium, and therefore the EPC was not adjusted as was done in Appendix C-1.

**Table 7.1**
**Calculation of Chemical Cancer Risks for Recreator**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.0E+03 | mg/kg | 1.7E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 2.3E+00 | mg/kg | 1.3E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 9.8E+00 | mg/kg | 3.3E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 5.0E-07 |
| | | | Ingestion | CHROMIUM | 1.6E+01 | mg/kg | 9.0E-07 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 4.5E-07 |
| | | | Ingestion | COBALT | 6.2E+00 | mg/kg | 3.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.0E+02 | mg/kg | 5.7E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 2.7E+00 | mg/kg | 1.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 8.0E+03 | mg/kg | 4.5E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.7E+02 | mg/kg | 9.5E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 6.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 8.6E-01 | mg/kg | 4.8E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 6.5E-02 | mg/kg | 3.6E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 7.3E-09 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 1.1E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.1E-07 |
| | | | Ingestion | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 8.2E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 8.2E-07 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 1.7E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.7E-07 |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 3.5E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 3.5E-09 |
| | | | Ingestion | CHRYSENE | 3.0E+01 | mg/kg | 1.7E-06 | mg/kg-d | 1.0E-03 | (mg/kg-d)-1 | 1.7E-09 |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 8.4E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 8.4E-08 |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 2.3E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.3E-08 |
| | | | Ingestion | **TICs** | | | | | | | |
| | | | Ingestion | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 6.7E-07 | mg/kg-d | 1.2E+00 | (mg/kg-d)-1 | 8.1E-07 |
| | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | | **3.0E-06** |
| Sediment | Sediment | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 2.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 9.8E+00 | mg/kg | 2.0E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 3.0E-07 |
| | | | Dermal | CHROMIUM | 1.6E+01 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 6.2E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.0E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 2.7E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 8.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.7E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 8.6E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 6.5E-02 | mg/kg | 6.1E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.2E-08 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 1.7E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.7E-07 |
| | | | Dermal | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 1.3E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.3E-06 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 2.6E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.6E-07 |
| | | | Dermal | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 5.5E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 5.5E-09 |
| | | | Dermal | CHRYSENE | 3.0E+01 | mg/kg | 2.6E-06 | mg/kg-d | 1.0E-03 | (mg/kg-d)-1 | 2.6E-09 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 1.3E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.3E-07 |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 3.6E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.6E-08 |
| | | | Dermal | **TICs** | | | | | | | |
| | | | Dermal | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 1.1E-06 | mg/kg-d | 1.2E+00 | (mg/kg-d)-1 | 1.3E-06 |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **3.5E-06** |
| Surface Water | Surface Water | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ARSENIC | 7.8E-03 | mg/L | 2.6E-08 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 4.0E-08 |
| | | | Dermal | CHROMIUM | 2.6E-03 | mg/L | 8.6E-09 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 1.7E-07 |
| | | | Dermal | COBALT | 2.1E-03 | mg/L | 2.9E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.4E-03 | mg/L | 1.5E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 1.1E+01 | mg/L | 3.8E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 9.5E-01 | mg/L | 3.2E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 4.9E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.9E-08 |
| | | | Dermal | BENZO(A)PYRENE | 2.0E-04 | mg/L | 2.2E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.2E-06 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 8.6E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 8.6E-08 |
| | | | Dermal | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 6.1E-05 | mg/kg-d | 1.4E-02 | (mg/kg-d)-1 | 8.6E-07 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 7.2E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 7.2E-07 |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 1.2E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.2E-07 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **4E-06** |
| **Exposure Point Total (SL)** | | | | | | | | | | | **1E-05** |
| Soil | Soil (0-2 ft bgs) | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.8E+03 | mg/kg | 7.3E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 1.4E+00 | mg/kg | 2.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 1.1E+02 | mg/kg | 1.3E-05 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.0E-05 |
| | | | Ingestion | CADMIUM | 2.3E+00 | mg/kg | 4.4E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 4.0E+01 | mg/kg | 7.7E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 3.8E-06 |
| | | | Ingestion | COBALT | 1.1E+00 | mg/kg | 2.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 6.0E-01 | mg/kg | 1.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 6.3E+03 | mg/kg | 1.2E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.9E+02 | mg/kg | 3.6E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 8.5E-01 | mg/kg | 1.6E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 1.2E+01 | mg/kg | 2.4E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | BWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E-01 | mg/kg | 2.6E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.6E-08 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **2.4E-05** |
| Soil | Soil (0-2 ft bgs) | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.8E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 1.4E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 1.1E+02 | mg/kg | 2.8E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 4.2E-06 |
| | | | Dermal | CADMIUM | 2.3E+00 | mg/kg | 1.8E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 4.0E+01 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 1.1E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 6.0E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 6.3E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.9E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 8.5E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 1.2E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 1.4E-01 | mg/kg | 1.4E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.4E-08 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **4.2E-06** |
| Soil | Particulates in Air | BWL | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 1.2E-06 | mg/m3 | 6.0E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ANTIMONY | 4.4E-10 | mg/m3 | 2.2E-08 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ARSENIC | 3.6E-08 | mg/m3 | 1.8E-06 | µg/m3 | 4.3E-03 | (µg/m3)-1 | 7.8E-09 |
| | | | Inhalation | CADMIUM | 7.1E-10 | mg/m3 | 3.6E-08 | µg/m3 | 1.8E-03 | (µg/m3)-1 | 6.5E-11 |
| | | | Inhalation | CHROMIUM | 1.2E-08 | mg/m3 | 6.3E-07 | µg/m3 | 8.4E-02 | (µg/m3)-1 | 5.3E-08 |
| | | | Inhalation | COBALT | 3.4E-10 | mg/m3 | 1.7E-08 | µg/m3 | 9.0E-03 | (µg/m3)-1 | 1.5E-10 |
| | | | Inhalation | CYANIDE | 7.9E-06 | mg/m3 | 4.0E-04 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | IRON | 1.9E-06 | mg/m3 | 9.9E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | LEAD | 5.8E-08 | mg/m3 | 3.0E-06 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | THALLIUM | 2.6E-10 | mg/m3 | 1.3E-08 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | VANADIUM | 3.9E-09 | mg/m3 | 2.0E-07 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)PYRENE | 4.2E-11 | mg/m3 | 2.1E-09 | µg/m3 | 6.0E-04 | (µg/m3)-1 | 1.3E-12 |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **6.1E-08** |
| Sediment | Sediment | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.5E+04 | mg/kg | 8.2E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 7.3E+00 | mg/kg | 4.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 2.8E+02 | mg/kg | 9.5E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.4E-05 |
| | | | Ingestion | CADMIUM | 1.3E+01 | mg/kg | 7.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 1.6E+02 | mg/kg | 8.7E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 4.3E-06 |
| | | | Ingestion | COBALT | 1.7E+01 | mg/kg | 9.4E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.8E+02 | mg/kg | 9.8E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Ingestion | CYANIDE | 1.5E+01 | mg/kg | 8.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 4.2E+04 | mg/kg | 2.4E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.5E+03 | mg/kg | 8.3E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 6.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 5.6E+01 | mg/kg | 3.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ZINC | 1.1E+03 | mg/kg | 6.3E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 8.0E-02 | mg/kg | 4.5E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 9.0E-09 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 7.5E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 7.5E-09 |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 7.7E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 7.7E-08 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 1.1E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.1E-08 |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 1.1E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 1.1E-09 |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 1.6E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.6E-08 |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 4.2E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.2E-09 |
| | | | Ingestion | NAPHTHALENE | 2.8E+00 | mg/kg | 1.6E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **VOCs** | | | | | | | |
| | | | Ingestion | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | 3.7E-09 | mg/kg-d | 4.6E-02 | (mg/kg-d)-1 | 1.7E-10 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **1.9E-05** |
| Sediment | Sediment | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.5E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 7.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 2.8E+02 | mg/kg | 5.7E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 8.6E-06 |
| | | | Dermal | CADMIUM | 1.3E+01 | mg/kg | 9.0E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 1.6E+02 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 1.7E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.8E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 1.5E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 4.2E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.5E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 5.6E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ZINC | 1.1E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 8.0E-02 | mg/kg | 7.6E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.5E-08 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 1.2E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.2E-08 |
| | | | Dermal | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 1.2E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.2E-07 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 1.8E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.8E-08 |
| | | | Dermal | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 1.7E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 1.7E-09 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 2.5E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.5E-08 |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 6.5E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 6.5E-09 |
| | | | Dermal | NAPHTHALENE | 2.8E+00 | mg/kg | 2.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **VOCs** | | | | | | | |
| | | | Dermal | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | NA | mg/kg-d | 4.6E-02 | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **8.8E-06** |
| Surface Water | Surface Water | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.3E+00 | mg/L | 4.3E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 1.2E-03 | mg/L | 3.9E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 3.1E-02 | mg/L | 1.0E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.5E-07 |
| | | | Dermal | CADMIUM | 6.2E-04 | mg/L | 2.1E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 4.5E-03 | mg/L | 1.5E-08 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 3.0E-07 |
| | | | Dermal | COBALT | 1.0E-03 | mg/L | 1.4E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 2.0E-03 | mg/L | 6.8E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 6.5E+00 | mg/L | 2.2E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.6E-02 | mg/L | 8.6E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 7.0E-02 | mg/L | 2.4E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 1.2E-03 | mg/L | 4.2E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 2.5E-03 | mg/L | 8.3E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 3.4E-05 | mg/L | 3.8E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.8E-07 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **8E-07** |
| **Exposure Point Total (BWL)** | | | | | | | | | | | **6E-05** |
| Soil | Soil (0-2 ft bgs) | HC | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 9.2E+03 | mg/kg | 1.8E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 5.3E+00 | mg/kg | 1.0E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 5.0E+02 | mg/kg | 5.7E-05 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 8.5E-05 |
| | | | Ingestion | BARIUM | 1.9E+03 | mg/kg | 3.7E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CADMIUM | 2.9E+00 | mg/kg | 5.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 6.4E+02 | mg/kg | 1.2E-04 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 6.1E-05 |
| | | | Ingestion | COBALT | 6.3E+00 | mg/kg | 1.2E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.4E+02 | mg/kg | 2.7E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 4.9E+01 | mg/kg | 9.3E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 2.8E+04 | mg/kg | 5.3E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 3.3E+03 | mg/kg | 6.2E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 3.4E+02 | mg/kg | 6.5E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | HC | Ingestion | MERCURY | 7.7E-01 | mg/kg | 1.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | NICKEL | 1.4E+01 | mg/kg | 2.6E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 6.6E-01 | mg/kg | 1.3E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 3.0E+01 | mg/kg | 5.8E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ZINC | 5.3E+02 | mg/kg | 1.0E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 5.5E-02 | mg/kg | 1.0E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 2.1E-08 |
| | | | Ingestion | AROCLOR-1260 | 1.7E-01 | mg/kg | 3.1E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 6.3E-08 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.6E+00 | mg/kg | 3.0E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.0E-08 |
| | | | Ingestion | BENZO(A)PYRENE | 1.8E+00 | mg/kg | 3.3E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.3E-07 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 3.8E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.8E-08 |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.8E+00 | mg/kg | 3.5E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 3.5E-09 |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 3.0E-01 | mg/kg | 5.6E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 5.6E-08 |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.7E-01 | mg/kg | 1.5E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.5E-08 |
| | | | Ingestion | NAPHTHALENE | 2.7E-01 | mg/kg | 5.1E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **1.5E-04** |
| Soil | Soil (0-2 ft bgs) | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 9.2E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 5.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 5.0E+02 | mg/kg | 1.2E-05 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.8E-05 |
| | | | Dermal | BARIUM | 1.9E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CADMIUM | 2.9E+00 | mg/kg | 2.3E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 6.4E+02 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 6.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.4E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.9E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 2.8E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 3.3E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 3.4E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MERCURY | 7.7E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | NICKEL | 1.4E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 6.6E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 3.0E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ZINC | 5.3E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 5.5E-02 | mg/kg | 6.2E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.2E-08 |
| | | | Dermal | AROCLOR-1260 | 1.7E-01 | mg/kg | 1.9E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 3.7E-08 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | HC | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.6E+00 | mg/kg | 1.7E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.7E-08 |
| | | | Dermal | BENZO(A)PYRENE | 1.8E+00 | mg/kg | 1.8E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.8E-07 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 2.1E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.1E-08 |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.8E+00 | mg/kg | 1.9E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 1.9E-09 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 3.0E-01 | mg/kg | 3.1E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.1E-08 |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.7E-01 | mg/kg | 8.1E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 8.1E-09 |
| | | | Dermal | NAPHTHALENE | 2.7E-01 | mg/kg | 2.8E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **1.8E-05** |
| Soil | Particulates in Air | HC | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 2.8E-06 | mg/m3 | 1.4E-04 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ANTIMONY | 1.6E-09 | mg/m3 | 8.4E-08 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ARSENIC | 1.5E-07 | mg/m3 | 7.8E-06 | µg/m3 | 4.3E-03 | (µg/m3)-1 | 3.4E-08 |
| | | | Inhalation | BARIUM | 6.0E-07 | mg/m3 | 3.1E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | CADMIUM | 9.0E-10 | mg/m3 | 4.6E-08 | µg/m3 | 1.8E-03 | (µg/m3)-1 | 8.2E-11 |
| | | | Inhalation | CHROMIUM | 2.0E-07 | mg/m3 | 1.0E-05 | µg/m3 | 8.4E-02 | (µg/m3)-1 | 8.5E-07 |
| | | | Inhalation | COBALT | 1.9E-09 | mg/m3 | 9.9E-08 | µg/m3 | 9.0E-03 | (µg/m3)-1 | 8.9E-10 |
| | | | Inhalation | COPPER | 4.4E-08 | mg/m3 | 2.2E-06 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | CYANIDE | 6.5E-04 | mg/m3 | 3.3E-02 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | IRON | 8.5E-06 | mg/m3 | 4.3E-04 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | LEAD | 1.0E-06 | mg/m3 | 5.2E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | MANGANESE | 1.0E-07 | mg/m3 | 5.3E-06 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | MERCURY | 2.4E-10 | mg/m3 | 1.2E-08 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | NICKEL | 4.2E-09 | mg/m3 | 2.2E-07 | µg/m3 | 2.6E-04 | (µg/m3)-1 | 5.6E-11 |
| | | | Inhalation | THALLIUM | 2.0E-10 | mg/m3 | 1.0E-08 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | VANADIUM | 9.4E-09 | mg/m3 | 4.8E-07 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ZINC | 1.6E-07 | mg/m3 | 8.4E-06 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | **PEST/PCB** | | | | | | | |
| | | | Inhalation | AROCLOR-1254 | 5.1E-08 | mg/m3 | 2.6E-06 | µg/m3 | 5.7E-04 | (µg/m3)-1 | 1.5E-09 |
| | | | Inhalation | AROCLOR-1260 | 9.8E-08 | mg/m3 | 5.0E-06 | µg/m3 | 5.7E-04 | (µg/m3)-1 | 2.8E-09 |
| | | | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)ANTHRACENE | 2.8E-07 | mg/m3 | 1.4E-05 | µg/m3 | 6.0E-05 | (µg/m3)-1 | 8.6E-10 |
| | | | Inhalation | BENZO(A)PYRENE | 5.4E-10 | mg/m3 | 2.8E-08 | µg/m3 | 6.0E-04 | (µg/m3)-1 | 1.7E-11 |
| | | | Inhalation | BENZO(B)FLUORANTHENE | 6.2E-10 | mg/m3 | 3.2E-08 | µg/m3 | 6.0E-05 | (µg/m3)-1 | 1.9E-12 |
| | | | Inhalation | BENZO(K)FLUORANTHENE | 5.7E-10 | mg/m3 | 2.9E-08 | µg/m3 | 6.0E-06 | (µg/m3)-1 | 1.7E-13 |
| | | | Inhalation | DIBENZO(A,H)ANTHRACENE | 9.2E-11 | mg/m3 | 4.7E-09 | µg/m3 | 6.0E-04 | (µg/m3)-1 | 2.8E-12 |
| | | | Inhalation | INDENO(1,2,3-CD)PYRENE | 2.4E-10 | mg/m3 | 1.2E-08 | µg/m3 | 6.0E-05 | (µg/m3)-1 | 7.3E-13 |
| | | | Inhalation | NAPHTHALENE | 4.5E-06 | mg/m3 | 2.3E-04 | µg/m3 | 3.4E-05 | (µg/m3)-1 | 7.8E-09 |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **9.0E-07** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | HC | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 8.3E+03 | mg/kg | 4.7E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 2.5E+00 | mg/kg | 1.4E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 3.9E+02 | mg/kg | 1.3E-05 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.9E-05 |
| | | | Ingestion | BARIUM | 1.0E+03 | mg/kg | 5.6E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CADMIUM | 4.5E+00 | mg/kg | 2.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 4.4E+02 | mg/kg | 2.5E-05 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 1.2E-05 |
| | | | Ingestion | COBALT | 5.0E+00 | mg/kg | 2.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.7E+02 | mg/kg | 9.5E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 4.8E+01 | mg/kg | 2.7E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 1.7E+04 | mg/kg | 9.6E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 2.9E+03 | mg/kg | 1.6E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| Sediment | Sediment | HC | Ingestion | MANGANESE | 8.1E+01 | mg/kg | 4.6E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | NICKEL | 3.3E+01 | mg/kg | 1.9E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 1.6E+00 | mg/kg | 9.2E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 2.4E+01 | mg/kg | 1.4E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ZINC | 4.9E+02 | mg/kg | 2.7E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.4E-01 | mg/kg | 7.6E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.5E-08 |
| | | | Ingestion | AROCLOR-1260 | 5.8E-02 | mg/kg | 3.2E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 6.5E-09 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 7.1E-01 | mg/kg | 4.0E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.0E-09 |
| | | | Ingestion | BENZO(A)PYRENE | 7.0E-01 | mg/kg | 3.9E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.9E-08 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 9.5E-01 | mg/kg | 5.3E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 5.3E-09 |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.9E-01 | mg/kg | 1.1E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.1E-08 |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 3.9E-01 | mg/kg | 2.2E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.2E-09 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **3.2E-05** |
| Sediment | Sediment | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 8.3E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 2.5E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 3.9E+02 | mg/kg | 7.8E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.2E-05 |
| | | | Dermal | BARIUM | 1.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CADMIUM | 4.5E+00 | mg/kg | 3.1E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 4.4E+02 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 5.0E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.7E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.8E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | HC | Dermal | IRON | 1.7E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.9E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 8.1E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | NICKEL | 3.3E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 1.6E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 2.4E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ZINC | 4.9E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.4E-01 | mg/kg | 1.3E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 2.6E-08 |
| | | | Dermal | AROCLOR-1260 | 5.8E-02 | mg/kg | 5.5E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.1E-08 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 7.1E-01 | mg/kg | 6.2E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 6.2E-09 |
| | | | Dermal | BENZO(A)PYRENE | 7.0E-01 | mg/kg | 6.1E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 6.1E-08 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 9.5E-01 | mg/kg | 8.3E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 8.3E-09 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.9E-01 | mg/kg | 1.7E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.7E-08 |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 3.9E-01 | mg/kg | 3.4E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.4E-09 |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **1.2E-05** |
| Surface Water | Surface Water | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 6.2E+00 | mg/L | 2.1E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 3.4E-03 | mg/L | 1.1E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 1.1E-01 | mg/L | 3.6E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 5.5E-07 |
| | | | Dermal | BARIUM | 4.5E-01 | mg/L | 1.5E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CADMIUM | 2.5E-03 | mg/L | 8.4E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 1.2E-01 | mg/L | 3.9E-07 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 7.9E-06 |
| | | | Dermal | COBALT | 2.7E-03 | mg/L | 3.7E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 2.8E-02 | mg/L | 9.5E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 8.6E-03 | mg/L | 2.9E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 1.4E+01 | mg/L | 4.6E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.4E-01 | mg/L | 8.0E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.6E-01 | mg/L | 5.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MERCURY | 2.0E-04 | mg/L | 6.8E-10 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 5.4E-03 | mg/L | 1.8E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 5.1E-03 | mg/L | 1.7E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ZINC | 4.8E-01 | mg/L | 9.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **8E-06** |
| **Exposure Point Total (HC)** | | | | | | | | | | | **2E-04** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 4.6E+03 | mg/kg | 8.8E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 3.6E+00 | mg/kg | 6.9E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 8.4E+00 | mg/kg | 9.6E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.4E-06 |
| | | | Ingestion | CHROMIUM | 1.8E+01 | mg/kg | 3.5E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 1.8E-06 |
| | | | Ingestion | COBALT | 8.7E-01 | mg/kg | 1.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 3.7E-01 | mg/kg | 7.1E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 7.8E+03 | mg/kg | 1.5E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 2.1E+02 | mg/kg | 4.1E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 4.4E-01 | mg/kg | 8.4E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 1.3E-01 | mg/kg | 2.4E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.4E-08 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.6E-01 | mg/kg | 4.9E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.9E-09 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **3.2E-06** |
| Soil | Soil (0-2 ft bgs) | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 4.6E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 3.6E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 8.4E+00 | mg/kg | 2.0E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 3.1E-07 |
| | | | Dermal | CHROMIUM | 1.8E+01 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 8.7E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 3.7E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 7.8E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| Soil | Soil (0-2 ft bgs) | KWL | Dermal | LEAD | 2.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 4.4E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 1.3E-01 | mg/kg | 1.3E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.3E-08 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.6E-01 | mg/kg | 2.7E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.7E-09 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **3.2E-07** |
| Soil | Particulates in Air | KWL | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 1.4E-06 | mg/m3 | 7.2E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ANTIMONY | 1.1E-09 | mg/m3 | 5.7E-08 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ARSENIC | 2.6E-09 | mg/m3 | 1.3E-07 | µg/m3 | 4.3E-03 | (µg/m3)-1 | 5.7E-10 |
| | | | Inhalation | CHROMIUM | 5.7E-09 | mg/m3 | 2.9E-07 | µg/m3 | 8.4E-02 | (µg/m3)-1 | 2.4E-08 |
| | | | Inhalation | COBALT | 2.7E-10 | mg/m3 | 1.4E-08 | µg/m3 | 9.0E-03 | (µg/m3)-1 | 1.2E-10 |
| | | | Inhalation | CYANIDE | 4.9E-06 | mg/m3 | 2.5E-04 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | IRON | 2.4E-06 | mg/m3 | 1.2E-04 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | LEAD | 6.6E-08 | mg/m3 | 3.3E-06 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | THALLIUM | 1.4E-10 | mg/m3 | 6.9E-09 | µg/m3 | NA | (µg/m3)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Particulates in Air | KWL | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)PYRENE | 3.9E-11 | mg/m3 | 2.0E-09 | µg/m3 | 6.0E-04 | (µg/m3)-1 | 1.2E-12 |
| | | | Inhalation | BENZO(B)FLUORANTHENE | 7.9E-11 | mg/m3 | 4.0E-09 | µg/m3 | 6.0E-05 | (µg/m3)-1 | 2.4E-13 |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **2.5E-08** |
| Sediment | Sediment | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.6E+04 | mg/kg | 9.0E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 2.0E+00 | mg/kg | 1.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 8.8E+01 | mg/kg | 3.0E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 4.4E-06 |
| | | | Ingestion | CADMIUM | 7.7E+00 | mg/kg | 4.3E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 1.7E+02 | mg/kg | 9.7E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 4.8E-06 |
| | | | Ingestion | COBALT | 8.6E+00 | mg/kg | 4.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 2.1E+02 | mg/kg | 1.2E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 4.1E+00 | mg/kg | 2.3E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 2.7E+04 | mg/kg | 1.5E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.0E+03 | mg/kg | 5.7E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.4E+02 | mg/kg | 7.9E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | NICKEL | 3.7E+01 | mg/kg | 2.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 4.7E-01 | mg/kg | 2.6E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 2.6E+01 | mg/kg | 1.5E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.6E-01 | mg/kg | 9.2E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.8E-08 |
| Sediment | Sediment | KWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 6.4E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 6.4E-09 |
| | | | Ingestion | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 6.0E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 6.0E-08 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 7.8E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 7.8E-09 |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 6.8E-08 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 6.8E-10 |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 9.1E-09 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 9.1E-09 |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 2.3E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.3E-09 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **9.4E-06** |
| Sediment | Sediment | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.6E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 2.0E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 8.8E+01 | mg/kg | 1.8E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.7E-06 |
| | | | Dermal | CADMIUM | 7.7E+00 | mg/kg | 5.2E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 1.7E+02 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 8.6E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 2.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.1E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | KWL | Dermal | IRON | 2.7E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.4E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | NICKEL | 3.7E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 4.7E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 2.6E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.6E-01 | mg/kg | 1.6E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 3.1E-08 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 1.0E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.0E-08 |
| | | | Dermal | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 9.4E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 9.4E-08 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 1.2E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.2E-08 |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 1.1E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 1.1E-09 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 1.4E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.4E-08 |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 3.6E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.6E-09 |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **2.8E-06** |
| Surface Water | Surface Water | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.4E+00 | mg/L | 4.6E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 3.7E-03 | mg/L | 1.2E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 1.7E-02 | mg/L | 5.6E-08 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 8.5E-08 |
| | | | Dermal | CHROMIUM | 5.3E-03 | mg/L | 1.8E-08 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 3.6E-07 |
| | | | Dermal | COBALT | 1.6E-03 | mg/L | 2.2E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 1.8E-03 | mg/L | 6.0E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 3.6E+00 | mg/L | 1.2E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.9E-02 | mg/L | 9.9E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 8.0E-02 | mg/L | 2.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 5.8E-03 | mg/L | 2.0E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **4E-07** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **2E-05** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |

**Ingestion - Soil**

$$\text{Intake Factor (IF)} = \frac{IR \times FS \times EF \times ED \times CF}{BW \times AT}$$

| = | 1.9E-07 (Adult) |
|---|---|

| | | |
|---|---|---|
| IR | Ingestion Rate (mg/day) | 100 |
| FS | Fraction from Contaminated Source | 1 |
| EF | Soil Ingestion Exposure Frequency (days/year) | 150 |
| ED | Soil Ingestion Exposure Duration (years) | 26 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 80 |
| AT | Averaging Time (days) | 25,550 |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{soil} * IF * B$

(B) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Dermal - Soil**

$$\text{Intake Factor (IF)} = \frac{SA \times AF \times EF \times ED \times CF}{BW \times AT}$$

| = | 8.1E-07 (Adult) |
|---|---|

| | | |
|---|---|---|
| SA | Surface Area Exposed to Soil ($cm^2$/day) | 6,032 |
| AF | Soil Skin Adherence Factor ($mg/cm^2$) | 0.07 |
| EF | Soil Dermal Exposure Frequency (days/year) | 150 |
| ED | Soil Dermal Exposure Duration (years) | 26 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 80 |
| AT | Averaging Time (days) | 25,550 |

$Intake_{derm}(mg/kg{\cdot}d) = EPC_{soil} * IF * ABS$

(ABS) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |

**Inhalation - Soil**

$$\text{Intake Factor (IF)} = \frac{EF \times ED \times ET \times CF1 \times CF2}{AT}$$

| | | |
|---|---|---|
| = | 5.1E+01 | (Adult) |
| EF | Soil Exposure Frequency (days/year) | 150 |
| ED | Soil Exposure Duration (years) | 26 |
| ET | Soil Exposure Time (hours/day) | 8 |
| CF1 | Conversion Factor (days/hours) | 0.042 |
| CF2 | Conversion Factor (µg/mg) | 1,000 |
| AT | Averaging Time (days) | 25,550 |

$EPC_{air} = EPC_{soil}$ x [1/Volatilization Factor (VF) + 1/Particulate Emissions Factor (PEF)]

Exposure = $EPC_{air}$ x IF

Cancer Risk = Exposure x Inhalation Unit Risk (IUR)

**Ingestion - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{IR \times FS \times EF \times ED \times CF}{BW \times AT}$$

| | | |
|---|---|---|
| = | 5.6E-08 | (Adult) |
| IR | Ingestion Rate (mg/day) | 100 |
| FS | Fraction from Contaminated Source | 1 |
| EF | Sediment Ingestion Exposure Frequency (days/year) | 44 |
| ED | Sediment Ingestion Exposure Duration (years) | 26 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 80 |
| AT | Averaging Time (days) | 25,550 |

$Intake_{ing}(mg/kg \cdot d) = EPC_{sediment} * IF * B$

(B) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |

**Dermal - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{SA \times AF \times EF \times ED \times CF}{BW \times AT}$$

| = | 6.8E-07 (Adult) |
|---|---|

| | | |
|---|---|---|
| SA | Surface Area Exposed to Sediment ($cm^2$/day) | 6,032 |
| AF | Sediment Skin Adherence Factor ($mg/cm^2$) | 0.2 |
| EF | Sediment Dermal Exposure Frequency (days/year) | 44 |
| ED | Sediment Dermal Exposure Duration (years) | 26 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 80 |
| AT | Averaging Time (days) | 25,550 |

$Intake_{derm}(mg/kg{\cdot}d) = EPC_{sediment} * IF * ABS$

(ABS) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Dermal - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{SA \times EV \times EF \times ED}{BW \times AT}$$

| = | 3.4E+00 (Adult) |
|---|---|

| | | |
|---|---|---|
| SA | Surface Area Exposed to Surface Water ($cm^2$) | 6,032 |
| EF | Surface Water Dermal Exposure Frequency (days/year) | 44 |
| ED | Surface Water Dermal Exposure Duration (years) | 26 |
| EV | Events per Day (events/day) | 1 |
| BW | Body Weight (kg) | 80 |
| AT | Averaging Time (days) | 25,550 |

$Intake_{derm}(mg/kg{\cdot}d) = IF \times \text{Absorbed Dose per Event } (DA_{event})$

($DA_{event}$) presented in Table 4.6

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Table 7.2**
**Calculation of Chemical Cancer Risks for Recreator**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.0E+03 | mg/kg | 1.2E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 2.3E+00 | mg/kg | 8.8E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 9.8E+00 | mg/kg | 2.3E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 3.4E-07 |
| | | | Ingestion | CHROMIUM | 1.6E+01 | mg/kg | 1.9E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 9.3E-07 (a) |
| | | | Ingestion | COBALT | 6.2E+00 | mg/kg | 2.4E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.0E+02 | mg/kg | 3.9E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 2.7E+00 | mg/kg | 1.0E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 8.0E+03 | mg/kg | 3.1E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.7E+02 | mg/kg | 6.6E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 4.2E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 8.6E-01 | mg/kg | 3.3E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 6.5E-02 | mg/kg | 2.5E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 5.1E-09 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 2.3E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.3E-07 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 1.7E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.7E-06 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 3.4E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.4E-07 (a) |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 7.3E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 7.3E-09 (a) |
| | | | Ingestion | CHRYSENE | 3.0E+01 | mg/kg | 3.5E-06 | mg/kg-d | 1.0E-03 | (mg/kg-d)-1 | 3.5E-09 (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 1.7E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.7E-07 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 4.7E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.7E-08 (a) |
| | | | Ingestion | **TICs** | | | | | | | |
| | | | Ingestion | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 4.7E-07 | mg/kg-d | 1.2E+00 | (mg/kg-d)-1 | 5.6E-07 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **4.4E-06** |
| Sediment | Sediment | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 2.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 9.8E+00 | mg/kg | 1.1E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.6E-07 |
| | | | Dermal | CHROMIUM | 1.6E+01 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 6.2E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.0E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 2.7E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 8.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.7E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 8.6E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 6.5E-02 | mg/kg | 3.3E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 6.6E-09 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 2.8E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.8E-07 (a) |
| | | | Dermal | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 2.1E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.1E-06 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 4.2E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.2E-07 (a) |
| | | | Dermal | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 8.8E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 8.8E-09 (a) |
| | | | Dermal | CHRYSENE | 3.0E+01 | mg/kg | 4.2E-06 | mg/kg-d | 1.0E-03 | (mg/kg-d)-1 | 4.2E-09 (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 2.1E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.1E-07 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 5.7E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 5.7E-08 (a) |
| | | | Dermal | **TICs** | | | | | | | |
| | | | Dermal | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 5.6E-07 | mg/kg-d | 1.2E+00 | (mg/kg-d)-1 | 6.8E-07 |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **3.9E-06** |
| Surface Water | Surface Water | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ARSENIC | 7.8E-03 | mg/L | 1.4E-08 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.1E-08 |
| | | | Dermal | CHROMIUM | 2.6E-03 | mg/L | 1.4E-08 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 2.8E-07 (a) |
| | | | Dermal | COBALT | 2.1E-03 | mg/L | 1.5E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.4E-03 | mg/L | 8.0E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 1.1E+01 | mg/L | 2.0E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 9.5E-01 | mg/L | 1.7E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 7.9E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 7.9E-08 (a) |
| | | | Dermal | BENZO(A)PYRENE | 2.0E-04 | mg/L | 3.5E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.5E-06 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 1.4E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.4E-07 (a) |
| | | | Dermal | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 3.3E-05 | mg/kg-d | 1.4E-02 | (mg/kg-d)-1 | 4.6E-07 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 1.2E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.2E-06 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 1.9E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.9E-07 (a) |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **6E-06** |
| **Exposure Point Total (SL)** | | | | | | | | | | | **1E-05** |
| Soil | Soil (0-2 ft bgs) | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.8E+03 | mg/kg | 5.0E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 1.4E+00 | mg/kg | 1.9E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 1.1E+02 | mg/kg | 9.1E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.4E-05 |
| | | | Ingestion | CADMIUM | 2.3E+00 | mg/kg | 3.0E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 4.0E+01 | mg/kg | 1.6E-05 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 8.0E-06 (a) |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | BWL | Ingestion | COBALT | 1.1E+00 | mg/kg | 1.4E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 6.0E-01 | mg/kg | 7.9E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 6.3E+03 | mg/kg | 8.3E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.9E+02 | mg/kg | 2.5E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 8.5E-01 | mg/kg | 1.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 1.2E+01 | mg/kg | 1.7E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E-01 | mg/kg | 5.4E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 5.4E-08 (a) |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **2.2E-05** |
| Soil | Soil (0-2 ft bgs) | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.8E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 1.4E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 1.1E+02 | mg/kg | 1.5E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.2E-06 |
| | | | Dermal | CADMIUM | 2.3E+00 | mg/kg | 9.8E-10 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 4.0E+01 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 1.1E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 6.0E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 6.3E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.9E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 8.5E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 1.2E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 1.4E-01 | mg/kg | 2.3E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.3E-08 (a) |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **2.2E-06** |
| Soil | Particulates in Air | BWL | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 1.2E-06 | mg/m3 | 2.3E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ANTIMONY | 4.4E-10 | mg/m3 | 8.6E-09 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ARSENIC | 3.6E-08 | mg/m3 | 6.9E-07 | µg/m3 | 4.3E-03 | (µg/m3)-1 | 3.0E-09 |
| | | | Inhalation | CADMIUM | 7.1E-10 | mg/m3 | 1.4E-08 | µg/m3 | 1.8E-03 | (µg/m3)-1 | 2.5E-11 |
| | | | Inhalation | CHROMIUM | 1.2E-08 | mg/m3 | 7.3E-07 | µg/m3 | 8.4E-02 | (µg/m3)-1 | 6.1E-08 (a) |
| | | | Inhalation | COBALT | 3.4E-10 | mg/m3 | 6.6E-09 | µg/m3 | 9.0E-03 | (µg/m3)-1 | 5.9E-11 |
| | | | Inhalation | CYANIDE | 7.9E-06 | mg/m3 | 1.6E-04 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | IRON | 1.9E-06 | mg/m3 | 3.8E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | LEAD | 5.8E-08 | mg/m3 | 1.1E-06 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | THALLIUM | 2.6E-10 | mg/m3 | 5.2E-09 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | VANADIUM | 3.9E-09 | mg/m3 | 7.5E-08 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)PYRENE | 4.2E-11 | mg/m3 | 2.5E-09 | µg/m3 | 6.0E-04 | (µg/m3)-1 | 1.5E-12 (a) |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **6.5E-08** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.5E+04 | mg/kg | 5.7E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 7.3E+00 | mg/kg | 2.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 2.8E+02 | mg/kg | 6.6E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 9.9E-06 |
| | | | Ingestion | CADMIUM | 1.3E+01 | mg/kg | 5.2E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 1.6E+02 | mg/kg | 1.8E-05 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 9.1E-06 (a) |
| | | | Ingestion | COBALT | 1.7E+01 | mg/kg | 6.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.8E+02 | mg/kg | 6.8E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 1.5E+01 | mg/kg | 5.9E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 4.2E+04 | mg/kg | 1.6E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.5E+03 | mg/kg | 5.8E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 4.3E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 5.6E+01 | mg/kg | 2.2E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ZINC | 1.1E+03 | mg/kg | 4.3E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 8.0E-02 | mg/kg | 3.1E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 6.2E-09 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 1.6E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.6E-08 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 1.6E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.6E-07 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 2.4E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.4E-08 (a) |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 2.3E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 2.3E-09 (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 3.3E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.3E-08 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 8.7E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 8.7E-09 (a) |
| | | | Ingestion | NAPHTHALENE | 2.8E+00 | mg/kg | 1.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **VOCs** | | | | | | | |
| | | | Ingestion | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | 3.7E-09 | mg/kg-d | 4.6E-02 | (mg/kg-d)-1 | 1.7E-10 (a) |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **1.9E-05** |
| Sediment | Sediment | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.5E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 7.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 2.8E+02 | mg/kg | 3.1E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 4.6E-06 |
| | | | Dermal | CADMIUM | 1.3E+01 | mg/kg | 4.8E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 1.6E+02 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 1.7E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.8E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 1.5E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 4.2E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.5E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 5.6E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ZINC | 1.1E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 8.0E-02 | mg/kg | 4.0E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 8.1E-09 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 1.9E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.9E-08 (a) |
| | | | Dermal | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 1.9E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.9E-07 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 2.8E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.8E-08 (a) |
| | | | Dermal | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 2.8E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 2.8E-09 (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 4.0E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 4.0E-08 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 1.0E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.0E-08 (a) |
| | | | Dermal | NAPHTHALENE | 2.8E+00 | mg/kg | 1.3E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **VOCs** | | | | | | | |
| | | | Dermal | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | NA | mg/kg-d | 4.6E-02 | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **4.9E-06** |
| Surface Water | Surface Water | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.3E+00 | mg/L | 2.3E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 1.2E-03 | mg/L | 2.1E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 3.1E-02 | mg/L | 5.5E-08 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 8.3E-08 |
| | | | Dermal | CADMIUM | 6.2E-04 | mg/L | 1.1E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 4.5E-03 | mg/L | 2.4E-08 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 4.8E-07 (a) |
| | | | Dermal | COBALT | 1.0E-03 | mg/L | 7.3E-10 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 2.0E-03 | mg/L | 3.6E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 6.5E+00 | mg/L | 1.2E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.6E-02 | mg/L | 4.6E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 7.0E-02 | mg/L | 1.3E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 1.2E-03 | mg/L | 2.2E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 2.5E-03 | mg/L | 4.4E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 3.4E-05 | mg/L | 6.0E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 6.0E-07 (a) |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1E-06** |
| **Exposure Point Total (BWL)** | | | | | | | | | | | **5E-05** |
| Soil | Soil (0-2 ft bgs) | HC | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 9.2E+03 | mg/kg | 1.2E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 5.3E+00 | mg/kg | 7.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 5.0E+02 | mg/kg | 3.9E-05 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 5.9E-05 |
| | | | Ingestion | BARIUM | 1.9E+03 | mg/kg | 2.6E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CADMIUM | 2.9E+00 | mg/kg | 3.9E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 6.4E+02 | mg/kg | 2.6E-04 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 1.3E-04 (a) |
| | | | Ingestion | COBALT | 6.3E+00 | mg/kg | 8.3E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.4E+02 | mg/kg | 1.9E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | HC | Ingestion | CYANIDE | 4.9E+01 | mg/kg | 6.5E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 2.8E+04 | mg/kg | 3.7E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 3.3E+03 | mg/kg | 4.3E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 3.4E+02 | mg/kg | 4.5E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MERCURY | 7.7E-01 | mg/kg | 1.0E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | NICKEL | 1.4E+01 | mg/kg | 1.8E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 6.6E-01 | mg/kg | 8.7E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 3.0E+01 | mg/kg | 4.0E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ZINC | 5.3E+02 | mg/kg | 7.1E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 5.5E-02 | mg/kg | 7.3E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.5E-08 |
| | | | Ingestion | AROCLOR-1260 | 1.7E-01 | mg/kg | 2.2E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 4.4E-08 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.6E+00 | mg/kg | 6.3E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 6.3E-08 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 1.8E+00 | mg/kg | 7.0E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 7.0E-07 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 8.0E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 8.0E-08 (a) |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.8E+00 | mg/kg | 7.3E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 7.3E-09 (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 3.0E-01 | mg/kg | 1.2E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.2E-07 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.7E-01 | mg/kg | 3.1E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.1E-08 (a) |
| | | | Ingestion | NAPHTHALENE | 2.7E-01 | mg/kg | 3.5E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **1.9E-04** |
| Soil | Soil (0-2 ft bgs) | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 9.2E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 5.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 5.0E+02 | mg/kg | 6.4E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 9.6E-06 |
| | | | Dermal | BARIUM | 1.9E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CADMIUM | 2.9E+00 | mg/kg | 1.3E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 6.4E+02 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 6.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.4E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.9E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 2.8E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 3.3E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 3.4E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MERCURY | 7.7E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | NICKEL | 1.4E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 6.6E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 3.0E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ZINC | 5.3E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | HC | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 5.5E-02 | mg/kg | 3.3E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 6.6E-09 |
| | | | Dermal | AROCLOR-1260 | 1.7E-01 | mg/kg | 9.9E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 2.0E-08 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.6E+00 | mg/kg | 2.7E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.7E-08 (a) |
| | | | Dermal | BENZO(A)PYRENE | 1.8E+00 | mg/kg | 2.9E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.9E-07 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 3.4E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.4E-08 (a) |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.8E+00 | mg/kg | 3.1E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 3.1E-09 (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 3.0E-01 | mg/kg | 5.0E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 5.0E-08 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.7E-01 | mg/kg | 1.3E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.3E-08 (a) |
| | | | Dermal | NAPHTHALENE | 2.7E-01 | mg/kg | 1.5E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **1.0E-05** |
| Soil | Particulates in Air | HC | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 2.8E-06 | mg/m3 | 5.6E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ANTIMONY | 1.6E-09 | mg/m3 | 3.2E-08 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ARSENIC | 1.5E-07 | mg/m3 | 3.0E-06 | µg/m3 | 4.3E-03 | (µg/m3)-1 | 1.3E-08 |
| | | | Inhalation | BARIUM | 6.0E-07 | mg/m3 | 1.2E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | CADMIUM | 9.0E-10 | mg/m3 | 1.8E-08 | µg/m3 | 1.8E-03 | (µg/m3)-1 | 3.2E-11 |
| | | | Inhalation | CHROMIUM | 2.0E-07 | mg/m3 | 1.2E-05 | µg/m3 | 8.4E-02 | (µg/m3)-1 | 9.8E-07 (a) |
| | | | Inhalation | COBALT | 1.9E-09 | mg/m3 | 3.8E-08 | µg/m3 | 9.0E-03 | (µg/m3)-1 | 3.4E-10 |
| | | | Inhalation | COPPER | 4.4E-08 | mg/m3 | 8.6E-07 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | CYANIDE | 6.5E-04 | mg/m3 | 1.3E-02 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | IRON | 8.5E-06 | mg/m3 | 1.7E-04 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | LEAD | 1.0E-06 | mg/m3 | 2.0E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | MANGANESE | 1.0E-07 | mg/m3 | 2.1E-06 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | MERCURY | 2.4E-10 | mg/m3 | 4.7E-09 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | NICKEL | 4.2E-09 | mg/m3 | 8.3E-08 | µg/m3 | 2.6E-04 | (µg/m3)-1 | 2.2E-11 |
| | | | Inhalation | THALLIUM | 2.0E-10 | mg/m3 | 4.0E-09 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | VANADIUM | 9.4E-09 | mg/m3 | 1.8E-07 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ZINC | 1.6E-07 | mg/m3 | 3.2E-06 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | **PEST/PCB** | | | | | | | |
| | | | Inhalation | AROCLOR-1254 | 5.1E-08 | mg/m3 | 1.0E-06 | µg/m3 | 5.7E-04 | (µg/m3)-1 | 5.7E-10 |
| | | | Inhalation | AROCLOR-1260 | 9.8E-08 | mg/m3 | 1.9E-06 | µg/m3 | 5.7E-04 | (µg/m3)-1 | 1.1E-09 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Particulates in Air | HC | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)ANTHRACENE | 2.8E-07 | mg/m3 | 1.7E-05 | µg/m3 | 6.0E-05 | (µg/m3)-1 | 1.0E-09 (a) |
| | | | Inhalation | BENZO(A)PYRENE | 5.4E-10 | mg/m3 | 3.2E-08 | µg/m3 | 6.0E-04 | (µg/m3)-1 | 1.9E-11 (a) |
| | | | Inhalation | BENZO(B)FLUORANTHENE | 6.2E-10 | mg/m3 | 3.7E-08 | µg/m3 | 6.0E-05 | (µg/m3)-1 | 2.2E-12 (a) |
| | | | Inhalation | BENZO(K)FLUORANTHENE | 5.7E-10 | mg/m3 | 3.4E-08 | µg/m3 | 6.0E-06 | (µg/m3)-1 | 2.0E-13 (a) |
| | | | Inhalation | DIBENZO(A,H)ANTHRACENE | 9.2E-11 | mg/m3 | 5.4E-09 | µg/m3 | 6.0E-04 | (µg/m3)-1 | 3.2E-12 (a) |
| | | | Inhalation | INDENO(1,2,3-CD)PYRENE | 2.4E-10 | mg/m3 | 1.4E-08 | µg/m3 | 6.0E-05 | (µg/m3)-1 | 8.4E-13 (a) |
| | | | Inhalation | NAPHTHALENE | 4.5E-06 | mg/m3 | 8.8E-05 | µg/m3 | 3.4E-05 | (µg/m3)-1 | 3.0E-09 |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **1.0E-06** |
| Sediment | Sediment | HC | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 8.3E+03 | mg/kg | 3.2E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 2.5E+00 | mg/kg | 9.5E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 3.9E+02 | mg/kg | 9.0E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.3E-05 |
| | | | Ingestion | BARIUM | 1.0E+03 | mg/kg | 3.9E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CADMIUM | 4.5E+00 | mg/kg | 1.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 4.4E+02 | mg/kg | 5.1E-05 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 2.6E-05 (a) |
| | | | Ingestion | COBALT | 5.0E+00 | mg/kg | 1.9E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.7E+02 | mg/kg | 6.6E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 4.8E+01 | mg/kg | 1.9E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 1.7E+04 | mg/kg | 6.7E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 2.9E+03 | mg/kg | 1.1E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 8.1E+01 | mg/kg | 3.2E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | NICKEL | 3.3E+01 | mg/kg | 1.3E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 1.6E+00 | mg/kg | 6.4E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 2.4E+01 | mg/kg | 9.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ZINC | 4.9E+02 | mg/kg | 1.9E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.4E-01 | mg/kg | 5.2E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.0E-08 |
| | | | Ingestion | AROCLOR-1260 | 5.8E-02 | mg/kg | 2.2E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 4.5E-09 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 7.1E-01 | mg/kg | 8.3E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 8.3E-09 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 7.0E-01 | mg/kg | 8.1E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 8.1E-08 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 9.5E-01 | mg/kg | 1.1E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.1E-08 (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.9E-01 | mg/kg | 2.2E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.2E-08 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 3.9E-01 | mg/kg | 4.5E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.5E-09 (a) |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **3.9E-05** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 8.3E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 2.5E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 3.9E+02 | mg/kg | 4.2E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 6.3E-06 |
| | | | Dermal | BARIUM | 1.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CADMIUM | 4.5E+00 | mg/kg | 1.6E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 4.4E+02 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 5.0E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.7E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.8E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 1.7E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.9E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 8.1E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | NICKEL | 3.3E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 1.6E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 2.4E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ZINC | 4.9E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.4E-01 | mg/kg | 6.8E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.4E-08 |
| | | | Dermal | AROCLOR-1260 | 5.8E-02 | mg/kg | 2.9E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 5.8E-09 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 7.1E-01 | mg/kg | 1.0E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.0E-08 (a) |
| | | | Dermal | BENZO(A)PYRENE | 7.0E-01 | mg/kg | 9.8E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 9.8E-08 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 9.5E-01 | mg/kg | 1.3E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.3E-08 (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.9E-01 | mg/kg | 2.7E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.7E-08 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 3.9E-01 | mg/kg | 5.5E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 5.5E-09 (a) |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **6.4E-06** |
| Surface Water | Surface Water | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 6.2E+00 | mg/L | 1.1E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 3.4E-03 | mg/L | 6.0E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 1.1E-01 | mg/L | 1.9E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.9E-07 |
| | | | Dermal | BARIUM | 4.5E-01 | mg/L | 8.2E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CADMIUM | 2.5E-03 | mg/L | 4.5E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 1.2E-01 | mg/L | 6.3E-07 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 1.3E-05 (a) |
| | | | Dermal | COBALT | 2.7E-03 | mg/L | 2.0E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 2.8E-02 | mg/L | 5.1E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | HC | Dermal | CYANIDE | 8.6E-03 | mg/L | 1.5E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 1.4E+01 | mg/L | 2.5E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.4E-01 | mg/L | 4.3E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.6E-01 | mg/L | 2.9E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MERCURY | 2.0E-04 | mg/L | 3.6E-10 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 5.4E-03 | mg/L | 9.7E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 5.1E-03 | mg/L | 9.2E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ZINC | 4.8E-01 | mg/L | 5.2E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1E-05** |
| **Exposure Point Total (HC)** | | | | | | | | | | | **3E-04** |
| Soil | Soil (0-2 ft bgs) | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 4.6E+03 | mg/kg | 6.1E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 3.6E+00 | mg/kg | 4.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 8.4E+00 | mg/kg | 6.7E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.0E-06 |
| | | | Ingestion | CHROMIUM | 1.8E+01 | mg/kg | 7.3E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 3.7E-06 (a) |
| | | | Ingestion | COBALT | 8.7E-01 | mg/kg | 1.2E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 3.7E-01 | mg/kg | 4.9E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 7.8E+03 | mg/kg | 1.0E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 2.1E+02 | mg/kg | 2.8E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 4.4E-01 | mg/kg | 5.8E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 1.3E-01 | mg/kg | 5.0E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 5.0E-08 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.6E-01 | mg/kg | 1.0E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.0E-08 (a) |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **4.7E-06** |
| Soil | Soil (0-2 ft bgs) | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 4.6E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 3.6E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 8.4E+00 | mg/kg | 1.1E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.6E-07 |
| | | | Dermal | CHROMIUM | 1.8E+01 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 8.7E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 3.7E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 7.8E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 4.4E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 1.3E-01 | mg/kg | 2.1E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.1E-08 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.6E-01 | mg/kg | 4.3E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.3E-09 (a) |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **1.9E-07** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Particulates in Air | KWL | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 1.4E-06 | mg/m3 | 2.8E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ANTIMONY | 1.1E-09 | mg/m3 | 2.2E-08 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ARSENIC | 2.6E-09 | mg/m3 | 5.1E-08 | µg/m3 | 4.3E-03 | (µg/m3)-1 | 2.2E-10 |
| | | | Inhalation | CHROMIUM | 5.7E-09 | mg/m3 | 3.3E-07 | µg/m3 | 8.4E-02 | (µg/m3)-1 | 2.8E-08 (a) |
| | | | Inhalation | COBALT | 2.7E-10 | mg/m3 | 5.3E-09 | µg/m3 | 9.0E-03 | (µg/m3)-1 | 4.7E-11 |
| | | | Inhalation | CYANIDE | 4.9E-06 | mg/m3 | 9.6E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | IRON | 2.4E-06 | mg/m3 | 4.7E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | LEAD | 6.6E-08 | mg/m3 | 1.3E-06 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | THALLIUM | 1.4E-10 | mg/m3 | 2.7E-09 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)PYRENE | 3.9E-11 | mg/m3 | 2.3E-09 | µg/m3 | 6.0E-04 | (µg/m3)-1 | 1.4E-12 (a) |
| | | | Inhalation | BENZO(B)FLUORANTHENE | 7.9E-11 | mg/m3 | 4.7E-09 | µg/m3 | 6.0E-05 | (µg/m3)-1 | 2.8E-13 (a) |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **2.8E-08** |
| Sediment | Sediment | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.6E+04 | mg/kg | 6.3E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 2.0E+00 | mg/kg | 7.9E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 8.8E+01 | mg/kg | 2.1E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 3.1E-06 |
| | | | Ingestion | CADMIUM | 7.7E+00 | mg/kg | 3.0E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 1.7E+02 | mg/kg | 2.0E-05 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 1.0E-05 (a) |
| | | | Ingestion | COBALT | 8.6E+00 | mg/kg | 3.3E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 2.1E+02 | mg/kg | 8.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 4.1E+00 | mg/kg | 1.6E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 2.7E+04 | mg/kg | 1.0E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.0E+03 | mg/kg | 3.9E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.4E+02 | mg/kg | 5.5E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | NICKEL | 3.7E+01 | mg/kg | 1.4E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 4.7E-01 | mg/kg | 1.8E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 2.6E+01 | mg/kg | 1.0E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.6E-01 | mg/kg | 6.4E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.3E-08 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 1.3E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.3E-08 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 1.2E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.2E-07 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 1.6E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.6E-08 (a) |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 1.4E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 1.4E-09 (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 1.9E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.9E-08 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 4.8E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.8E-09 (a) |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **1.3E-05** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.6E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 2.0E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 8.8E+01 | mg/kg | 9.5E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.4E-06 |
| | | | Dermal | CADMIUM | 7.7E+00 | mg/kg | 2.8E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 1.7E+02 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 8.6E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 2.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.1E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 2.7E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.4E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | NICKEL | 3.7E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 4.7E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 2.6E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.6E-01 | mg/kg | 8.3E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.7E-08 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 1.6E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.6E-08 (a) |
| | | | Dermal | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 1.5E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.5E-07 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 1.9E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.9E-08 (a) |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 1.7E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 1.7E-09 (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 2.3E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.3E-08 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 5.8E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 5.8E-09 (a) |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **1.7E-06** |
| Surface Water | Surface Water | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.4E+00 | mg/L | 2.5E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 3.7E-03 | mg/L | 6.7E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 1.7E-02 | mg/L | 3.0E-08 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 4.5E-08 |
| | | | Dermal | CHROMIUM | 5.3E-03 | mg/L | 2.9E-08 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 5.8E-07 (a) |
| | | | Dermal | COBALT | 1.6E-03 | mg/L | 1.2E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 1.8E-03 | mg/L | 3.2E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 3.6E+00 | mg/L | 6.5E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.9E-02 | mg/L | 5.3E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 8.0E-02 | mg/L | 1.4E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 5.8E-03 | mg/L | 1.0E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **6E-07** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **2E-05** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

(a) The mutagen risks were calculated for COPCs identified as having a mutagenic mode of action.

**Ingestion - Soil**

$$\text{Intake Factor (IF)} = \frac{\text{IR x FS x EF x ED x CF x ADAF}}{\text{BW x AT}}$$

| | | Non-mutagens | Mutagens[a] |
|---|---|---|---|
| = | | 1.3E-07 (Adolescent) | 4.0E-07 (6-16 years) |
| IR | Ingestion Rate (mg/day) | 100 | 100 |
| FS | Fraction from Contaminated Source | 1 | 1 |
| EF | Soil Ingestion Exposure Frequency (days/year) | 150 | 150 |
| ED | Soil Ingestion Exposure Duration (years) | 10 | 10 |
| CF | Conversion Factor (kg/mg) | 0.000001 | 0.000001 |
| BW | Body Weight (kg) | 44 | 44 |
| AT | Averaging Time (days) | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 3 |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{soil}*IF*B$

(B) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Dermal - Soil**

$$\text{Intake Factor (IF)} = \frac{\text{SA x AF x EF x ED x CF x ADAF}}{\text{BW x AT}}$$

| | | Non-mutagens | Mutagens[a] |
|---|---|---|---|
| = | | 4.3E-07 (Adolescent) | 1.3E-06 (6-16 years) |
| SA | Surface Area Exposed to Soil ($cm^2$/day) | 4,639 | 4,639 |
| AF | Soil Skin Adherence Factor ($mg/cm^2$) | 0.07 | 0.07 |
| EF | Soil Dermal Exposure Frequency (days/year) | 150 | 150 |
| ED | Soil Dermal Exposure Duration (years) | 10 | 10 |
| CF | Conversion Factor (kg/mg) | 0.000001 | 0.000001 |
| BW | Body Weight (kg) | 44 | 44 |
| AT | Averaging Time (days) | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 3 |

$Intake_{derm}(mg/kg{\cdot}d) = EPC_{soil}*IF*ABS$

(ABS) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |

**Inhalation - Soil**

$$\text{Intake Factor (IF)} = \frac{EF \times ED \times ET \times CF1 \times CF2 \times ADAF}{AT} =$$

| | | Non-mutagens | Mutagens[a] |
|---|---|---|---|
| | | 2.0E+01 (Adolescent) | 5.9E+01 (6-16 years) |
| EF | Soil Exposure Frequency (days/year) | 150 | 150 |
| ED | Soil Exposure Duration (years) | 10 | 10 |
| ET | Soil Exposure Time (hours/day) | 8 | 8 |
| CF1 | Conversion Factor (days/hours) | 0.042 | 0.042 |
| CF2 | Conversion Factor (µg/mg) | 1,000 | 1,000 |
| AT | Averaging Time (days) | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 3 |

$EPC_{air} = EPC_{soil} \times [1/\text{Volatilization Factor (VF)} + 1/\text{Particulate Emissions Factor (PEF)}]$

$\text{Exposure} = EPC_{air} \times IF$

Cancer Risk = Exposure x Inhalation Unit Risk (IUR)

**Ingestion - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{IR \times FS \times EF \times ED \times CF \times ADAF}{BW \times AT} =$$

| | | Non-mutagens | Mutagens[a] |
|---|---|---|---|
| | | 3.9E-08 (Adolescent) | 1.2E-07 (6-16 years) |
| IR | Ingestion Rate (mg/day) | 100 | 100 |
| FS | Fraction from Contaminated Source | 1 | 1 |
| EF | Sediment Ingestion Exposure Frequency (days/year) | 44 | 44 |
| ED | Sediment Ingestion Exposure Duration (years) | 10 | 10 |
| CF | Conversion Factor (kg/mg) | 0.000001 | 0.000001 |
| BW | Body Weight (kg) | 44 | 44 |
| AT | Averaging Time (days) | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 3 |

$Intake_{ing}(mg/kg \cdot d) = EPC_{sediment} * IF * B$

(B) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC Value | EPC Units | Cancer Risk Calculations: Intake/Exposure Value | Intake/Exposure Units | CSF/Unit Risk Value | CSF/Unit Risk Units | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|

**Dermal - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{SA \times AF \times EF \times ED \times CF \times ADAF}{BW \times AT} =$$

| | | Non-mutagens | Mutagens[a] |
|---|---|---|---|
| | | 3.6E-07 (Adolescent) | 1.1E-06 (6-16 years) |
| SA | Surface Area Exposed to Sediment ($cm^2$/day) | 4,639 | 4,639 |
| AF | Sediment Skin Adherence Factor ($mg/cm^2$) | 0.2 | 0.2 |
| EF | Sediment Dermal Exposure Frequency (days/year) | 44 | 44 |
| ED | Sediment Dermal Exposure Duration (years) | 10 | 10 |
| CF | Conversion Factor (kg/mg) | 0.000001 | 0.000001 |
| BW | Body Weight (kg) | 44 | 44 |
| AT | Averaging Time (days) | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 3 |

$Intake_{derm}(mg/kg{\cdot}d) = EPC_{sediment} * IF * ABS$

(ABS) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Dermal - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{SA \times EV \times EF \times ED \times ADAF}{BW \times AT} =$$

| | | Non-mutagens | Mutagens[a] |
|---|---|---|---|
| | | 1.8E+00 (Adolescent) | 5.4E+00 (6-16 years) |
| SA | Surface Area Exposed to Surface Water ($cm^2$) | 4,639 | 4,639 |
| EF | Surface Water Dermal Exposure Frequency (days/year) | 44 | 44 |
| ED | Surface Water Dermal Exposure Duration (years) | 10 | 10 |
| EV | Events per Day (events/day) | 1 | 1 |
| BW | Body Weight (kg) | 44 | 44 |
| AT | Averaging Time (days) | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 3 |

$Intake_{derm}(mg/kg{\cdot}d)$ = IF x Absorbed Dose per Event ($DA_{event}$)

($DA_{event}$) presented in Table 4.6

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Calculation of Lifetime Average Daily Dose for Recreator - Trichloroethylene in Sediment**

$Intake\ Factor_{ing} = [(CAF_o*(IF_{child}+IF_{adult}))+(MAF_o*(IF_{0-2}+IF_{2-6}+IF_{6-16}+IF_{16-26}))]$

| | | |
|---|---|---|
| Age-dependent adjustment factor for carcinogens - oral slope factor | $CAF_o$ | 0.804 |
| Age-dependent adjustment factor for mutagens - oral slope factor | $MAF_o$ | 0.202 |

$Intake\ Factor_{derm} = [(CAF_o*(IF_{child}+IF_{adult}))+MAF_o*(IF_{0-2}+IF_{2-6}+IF_{6-16}+IF_{16-26}))]$

**Table 7.3**
**Calculation of Chemical Cancer Risks for Recreator**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.0E+03 | mg/kg | 4.1E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 2.3E+00 | mg/kg | 3.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 9.8E+00 | mg/kg | 8.1E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.2E-06 |
| | | | Ingestion | CHROMIUM | 1.6E+01 | mg/kg | 1.6E-05 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 8.0E-06 (a) |
| | | | Ingestion | COBALT | 6.2E+00 | mg/kg | 8.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.0E+02 | mg/kg | 1.4E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 2.7E+00 | mg/kg | 3.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 8.0E+03 | mg/kg | 1.1E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.7E+02 | mg/kg | 2.3E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 1.5E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 8.6E-01 | mg/kg | 1.2E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 6.5E-02 | mg/kg | 9.0E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.8E-08 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 2.0E-05 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.0E-06 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 1.5E-05 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.5E-05 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 3.0E-05 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.0E-06 (a) |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 6.3E-06 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 6.3E-08 (a) |
| | | | Ingestion | CHRYSENE | 3.0E+01 | mg/kg | 3.0E-05 | mg/kg-d | 1.0E-03 | (mg/kg-d)-1 | 3.0E-08 (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 1.5E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.5E-06 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 4.1E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.1E-07 (a) |
| | | | Ingestion | **TICs** | | | | | | | |
| | | | Ingestion | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 1.7E-06 | mg/kg-d | 1.2E+00 | (mg/kg-d)-1 | 2.0E-06 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **3.3E-05** |
| Sediment | Sediment | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 2.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 9.8E+00 | mg/kg | 9.7E-08 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.4E-07 |
| | | | Dermal | CHROMIUM | 1.6E+01 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 6.2E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.0E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 2.7E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 8.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.7E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 8.6E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 6.5E-02 | mg/kg | 3.0E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 6.0E-09 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 5.4E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 5.4E-07 (a) |
| | | | Dermal | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 4.0E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 4.0E-06 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 8.1E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 8.1E-07 (a) |
| | | | Dermal | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 1.7E-06 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 1.7E-08 (a) |
| | | | Dermal | CHRYSENE | 3.0E+01 | mg/kg | 8.2E-06 | mg/kg-d | 1.0E-03 | (mg/kg-d)-1 | 8.2E-09 (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 4.1E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 4.1E-07 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 1.1E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.1E-07 (a) |
| | | | Dermal | **TICs** | | | | | | | |
| | | | Dermal | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 5.1E-07 | mg/kg-d | 1.2E+00 | (mg/kg-d)-1 | 6.1E-07 |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **6.7E-06** |
| Surface Water | Surface Water | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ARSENIC | 7.8E-03 | mg/L | 1.3E-08 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.9E-08 |
| | | | Dermal | CHROMIUM | 2.6E-03 | mg/L | 2.7E-08 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 5.4E-07 (a) |
| | | | Dermal | COBALT | 2.1E-03 | mg/L | 1.4E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.4E-03 | mg/L | 7.3E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 1.1E+01 | mg/L | 1.9E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 9.5E-01 | mg/L | 1.5E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 1.5E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.5E-07 (a) |
| | | | Dermal | BENZO(A)PYRENE | 2.0E-04 | mg/L | 6.9E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 6.9E-06 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 2.7E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.7E-07 (a) |
| | | | Dermal | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 3.0E-05 | mg/kg-d | 1.4E-02 | (mg/kg-d)-1 | 4.2E-07 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 2.2E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.2E-06 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 3.7E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.7E-07 (a) |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1E-05** |
| **Exposure Point Total (SL)** | | | | | | | | | | | **5E-05** |
| Soil | Soil (0-2 ft bgs) | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.8E+03 | mg/kg | 1.8E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 1.4E+00 | mg/kg | 6.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 1.1E+02 | mg/kg | 3.2E-05 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 4.9E-05 |
| | | | Ingestion | CADMIUM | 2.3E+00 | mg/kg | 1.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 4.0E+01 | mg/kg | 1.4E-04 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 6.9E-05 (a) |
| | | | Ingestion | COBALT | 1.1E+00 | mg/kg | 5.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 6.0E-01 | mg/kg | 2.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 6.3E+03 | mg/kg | 2.9E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | BWL | Ingestion | LEAD | 1.9E+02 | mg/kg | 8.8E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 8.5E-01 | mg/kg | 4.0E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 1.2E+01 | mg/kg | 5.9E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E-01 | mg/kg | 4.6E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 4.6E-07 (a) |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **1.2E-04** |
| Soil | Soil (0-2 ft bgs) | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.8E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 1.4E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 1.1E+02 | mg/kg | 3.8E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 5.8E-06 |
| | | | Dermal | CADMIUM | 2.3E+00 | mg/kg | 2.5E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 4.0E+01 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 1.1E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 6.0E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 6.3E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.9E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 8.5E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 1.2E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 1.4E-01 | mg/kg | 1.3E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.3E-07 (a) |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **5.9E-06** |
| Soil | Particulates in Air | BWL | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 1.2E-06 | mg/m3 | 1.4E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ANTIMONY | 4.4E-10 | mg/m3 | 5.2E-09 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ARSENIC | 3.6E-08 | mg/m3 | 4.2E-07 | µg/m3 | 4.3E-03 | (µg/m3)-1 | 1.8E-09 |
| | | | Inhalation | CADMIUM | 7.1E-10 | mg/m3 | 8.3E-09 | µg/m3 | 1.8E-03 | (µg/m3)-1 | 1.5E-11 |
| | | | Inhalation | CHROMIUM | 1.2E-08 | mg/m3 | 7.8E-07 | µg/m3 | 8.4E-02 | (µg/m3)-1 | 6.6E-08 (a) |
| | | | Inhalation | COBALT | 3.4E-10 | mg/m3 | 4.0E-09 | µg/m3 | 9.0E-03 | (µg/m3)-1 | 3.6E-11 |
| | | | Inhalation | CYANIDE | 7.9E-06 | mg/m3 | 9.3E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | IRON | 1.9E-06 | mg/m3 | 2.3E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | LEAD | 5.8E-08 | mg/m3 | 6.8E-07 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | THALLIUM | 2.6E-10 | mg/m3 | 3.1E-09 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | VANADIUM | 3.9E-09 | mg/m3 | 4.5E-08 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)PYRENE | 4.2E-11 | mg/m3 | 2.6E-09 | µg/m3 | 6.0E-04 | (µg/m3)-1 | 1.6E-12 (a) |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **6.7E-08** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.5E+04 | mg/kg | 2.0E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 7.3E+00 | mg/kg | 1.0E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 2.8E+02 | mg/kg | 2.3E-05 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 3.5E-05 |
| | | | Ingestion | CADMIUM | 1.3E+01 | mg/kg | 1.8E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 1.6E+02 | mg/kg | 1.6E-04 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 7.8E-05 (a) |
| | | | Ingestion | COBALT | 1.7E+01 | mg/kg | 2.3E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.8E+02 | mg/kg | 2.4E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 1.5E+01 | mg/kg | 2.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 4.2E+04 | mg/kg | 5.8E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.5E+03 | mg/kg | 2.0E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 1.5E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 5.6E+01 | mg/kg | 7.7E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ZINC | 1.1E+03 | mg/kg | 1.5E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 8.0E-02 | mg/kg | 1.1E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 2.2E-08 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 1.4E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.4E-07 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 1.4E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.4E-06 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 2.0E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.0E-07 (a) |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 2.0E-06 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 2.0E-08 (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 2.9E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.9E-07 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 7.5E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 7.5E-08 (a) |
| | | | Ingestion | NAPHTHALENE | 2.8E+00 | mg/kg | 3.9E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **VOCs** | | | | | | | |
| | | | Ingestion | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | 2.1E-08 | mg/kg-d | 4.6E-02 | (mg/kg-d)-1 | 9.6E-10 (a) |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **1.2E-04** |
| Sediment | Sediment | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.5E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 7.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 2.8E+02 | mg/kg | 2.8E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 4.2E-06 |
| | | | Dermal | CADMIUM | 1.3E+01 | mg/kg | 4.4E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 1.6E+02 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 1.7E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.8E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 1.5E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 4.2E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.5E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 5.6E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ZINC | 1.1E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 8.0E-02 | mg/kg | 3.7E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 7.3E-09 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 3.7E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.7E-08 (a) |
| | | | Dermal | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 3.8E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.8E-07 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 5.6E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 5.6E-08 (a) |
| | | | Dermal | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 5.4E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 5.4E-09 (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 7.8E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 7.8E-08 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 2.0E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.0E-08 (a) |
| | | | Dermal | NAPHTHALENE | 2.8E+00 | mg/kg | 1.2E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **VOCs** | | | | | | | |
| | | | Dermal | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | NA | mg/kg-d | 4.6E-02 | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **4.8E-06** |
| Surface Water | Surface Water | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.3E+00 | mg/L | 2.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 1.2E-03 | mg/L | 1.9E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 3.1E-02 | mg/L | 5.0E-08 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 7.5E-08 |
| | | | Dermal | CADMIUM | 6.2E-04 | mg/L | 1.0E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 4.5E-03 | mg/L | 4.7E-08 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 9.5E-07 (a) |
| | | | Dermal | COBALT | 1.0E-03 | mg/L | 6.6E-10 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 2.0E-03 | mg/L | 3.3E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 6.5E+00 | mg/L | 1.1E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.6E-02 | mg/L | 4.2E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 7.0E-02 | mg/L | 1.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 1.2E-03 | mg/L | 2.0E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 2.5E-03 | mg/L | 4.0E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 3.4E-05 | mg/L | 1.2E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.2E-06 (a) |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **2E-06** |
| **Exposure Point Total (BWL)** | | | | | | | | | | | **2E-04** |
| Soil | Soil (0-2 ft bgs) | HC | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 9.2E+03 | mg/kg | 4.3E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 5.3E+00 | mg/kg | 2.5E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 5.0E+02 | mg/kg | 1.4E-04 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.1E-04 |
| | | | Ingestion | BARIUM | 1.9E+03 | mg/kg | 9.1E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | HC | Ingestion | CADMIUM | 2.9E+00 | mg/kg | 1.4E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 6.4E+02 | mg/kg | 2.2E-03 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 1.1E-03 (a) |
| | | | Ingestion | COBALT | 6.3E+00 | mg/kg | 3.0E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.4E+02 | mg/kg | 6.7E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 4.9E+01 | mg/kg | 2.3E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 2.8E+04 | mg/kg | 1.3E-02 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 3.3E+03 | mg/kg | 1.5E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 3.4E+02 | mg/kg | 1.6E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MERCURY | 7.7E-01 | mg/kg | 3.6E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | NICKEL | 1.4E+01 | mg/kg | 6.4E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 6.6E-01 | mg/kg | 3.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 3.0E+01 | mg/kg | 1.4E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ZINC | 5.3E+02 | mg/kg | 2.5E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 5.5E-02 | mg/kg | 2.6E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 5.2E-08 |
| | | | Ingestion | AROCLOR-1260 | 1.7E-01 | mg/kg | 7.7E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.5E-07 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.6E+00 | mg/kg | 5.5E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 5.5E-07 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 1.8E+00 | mg/kg | 6.0E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 6.0E-06 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 6.9E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 6.9E-07 (a) |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.8E+00 | mg/kg | 6.3E-06 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 6.3E-08 (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 3.0E-01 | mg/kg | 1.0E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.0E-06 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.7E-01 | mg/kg | 2.6E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.6E-07 (a) |
| | | | Ingestion | NAPHTHALENE | 2.7E-01 | mg/kg | 1.2E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **1.3E-03** |
| Soil | Soil (0-2 ft bgs) | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 9.2E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 5.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 5.0E+02 | mg/kg | 1.7E-05 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.5E-05 |
| | | | Dermal | BARIUM | 1.9E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CADMIUM | 2.9E+00 | mg/kg | 3.2E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 6.4E+02 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 6.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.4E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.9E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 2.8E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 3.3E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 3.4E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | HC | Dermal | MERCURY | 7.7E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | NICKEL | 1.4E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 6.6E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 3.0E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ZINC | 5.3E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 5.5E-02 | mg/kg | 8.6E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.7E-08 |
| | | | Dermal | AROCLOR-1260 | 1.7E-01 | mg/kg | 2.6E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 5.1E-08 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.6E+00 | mg/kg | 1.5E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.5E-07 (a) |
| | | | Dermal | BENZO(A)PYRENE | 1.8E+00 | mg/kg | 1.6E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.6E-06 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 1.9E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.9E-07 (a) |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.8E+00 | mg/kg | 1.7E-06 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 1.7E-08 (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 3.0E-01 | mg/kg | 2.8E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.8E-07 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.7E-01 | mg/kg | 7.2E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 7.2E-08 (a) |
| | | | Dermal | NAPHTHALENE | 2.7E-01 | mg/kg | 3.9E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **2.7E-05** |
| Soil | Particulates in Air | HC | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 2.8E-06 | mg/m3 | 3.3E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ANTIMONY | 1.6E-09 | mg/m3 | 1.9E-08 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ARSENIC | 1.5E-07 | mg/m3 | 1.8E-06 | µg/m3 | 4.3E-03 | (µg/m3)-1 | 7.8E-09 |
| | | | Inhalation | BARIUM | 6.0E-07 | mg/m3 | 7.1E-06 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | CADMIUM | 9.0E-10 | mg/m3 | 1.1E-08 | µg/m3 | 1.8E-03 | (µg/m3)-1 | 1.9E-11 |
| | | | Inhalation | CHROMIUM | 2.0E-07 | mg/m3 | 1.2E-05 | µg/m3 | 8.4E-02 | (µg/m3)-1 | 1.0E-06 (a) |
| | | | Inhalation | COBALT | 1.9E-09 | mg/m3 | 2.3E-08 | µg/m3 | 9.0E-03 | (µg/m3)-1 | 2.1E-10 |
| | | | Inhalation | COPPER | 4.4E-08 | mg/m3 | 5.2E-07 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | CYANIDE | 6.5E-04 | mg/m3 | 7.6E-03 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | IRON | 8.5E-06 | mg/m3 | 1.0E-04 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | LEAD | 1.0E-06 | mg/m3 | 1.2E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | MANGANESE | 1.0E-07 | mg/m3 | 1.2E-06 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | MERCURY | 2.4E-10 | mg/m3 | 2.8E-09 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | NICKEL | 4.2E-09 | mg/m3 | 5.0E-08 | µg/m3 | 2.6E-04 | (µg/m3)-1 | 1.3E-11 |
| | | | Inhalation | THALLIUM | 2.0E-10 | mg/m3 | 2.4E-09 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | VANADIUM | 9.4E-09 | mg/m3 | 1.1E-07 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ZINC | 1.6E-07 | mg/m3 | 1.9E-06 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | **PEST/PCB** | | | | | | | |
| | | | Inhalation | AROCLOR-1254 | 5.1E-08 | mg/m3 | 6.0E-07 | µg/m3 | 5.7E-04 | (µg/m3)-1 | 3.4E-10 |
| | | | Inhalation | AROCLOR-1260 | 9.8E-08 | mg/m3 | 1.2E-06 | µg/m3 | 5.7E-04 | (µg/m3)-1 | 6.6E-10 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Particulates in Air | HC | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)ANTHRACENE | 2.8E-07 | mg/m3 | 1.8E-05 | µg/m3 | 6.0E-05 | (µg/m3)-1 | 1.1E-09 (a) |
| | | | Inhalation | BENZO(A)PYRENE | 5.4E-10 | mg/m3 | 3.4E-08 | µg/m3 | 6.0E-04 | (µg/m3)-1 | 2.0E-11 (a) |
| | | | Inhalation | BENZO(B)FLUORANTHENE | 6.2E-10 | mg/m3 | 3.9E-08 | µg/m3 | 6.0E-05 | (µg/m3)-1 | 2.3E-12 (a) |
| | | | Inhalation | BENZO(K)FLUORANTHENE | 5.7E-10 | mg/m3 | 3.6E-08 | µg/m3 | 6.0E-06 | (µg/m3)-1 | 2.1E-13 (a) |
| | | | Inhalation | DIBENZO(A,H)ANTHRACENE | 9.2E-11 | mg/m3 | 5.7E-09 | µg/m3 | 6.0E-04 | (µg/m3)-1 | 3.4E-12 (a) |
| | | | Inhalation | INDENO(1,2,3-CD)PYRENE | 2.4E-10 | mg/m3 | 1.5E-08 | µg/m3 | 6.0E-05 | (µg/m3)-1 | 9.0E-13 (a) |
| | | | Inhalation | NAPHTHALENE | 4.5E-06 | mg/m3 | 5.3E-05 | µg/m3 | 3.4E-05 | (µg/m3)-1 | 1.8E-09 |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **1.1E-06** |
| Sediment | Sediment | HC | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 8.3E+03 | mg/kg | 1.1E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 2.5E+00 | mg/kg | 3.4E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 3.9E+02 | mg/kg | 3.2E-05 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 4.8E-05 |
| | | | Ingestion | BARIUM | 1.0E+03 | mg/kg | 1.4E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CADMIUM | 4.5E+00 | mg/kg | 6.2E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 4.4E+02 | mg/kg | 4.4E-04 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 2.2E-04 (a) |
| | | | Ingestion | COBALT | 5.0E+00 | mg/kg | 6.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.7E+02 | mg/kg | 2.3E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 4.8E+01 | mg/kg | 6.6E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 1.7E+04 | mg/kg | 2.4E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 2.9E+03 | mg/kg | 3.9E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 8.1E+01 | mg/kg | 1.1E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | NICKEL | 3.3E+01 | mg/kg | 4.6E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 1.6E+00 | mg/kg | 2.3E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 2.4E+01 | mg/kg | 3.4E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ZINC | 4.9E+02 | mg/kg | 6.7E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.4E-01 | mg/kg | 1.9E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 3.7E-08 |
| | | | Ingestion | AROCLOR-1260 | 5.8E-02 | mg/kg | 8.0E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.6E-08 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 7.1E-01 | mg/kg | 7.1E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 7.1E-08 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 7.0E-01 | mg/kg | 7.0E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 7.0E-07 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 9.5E-01 | mg/kg | 9.5E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 9.5E-08 (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.9E-01 | mg/kg | 1.9E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.9E-07 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 3.9E-01 | mg/kg | 3.9E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.9E-08 (a) |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **2.7E-04** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 8.3E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 2.5E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 3.9E+02 | mg/kg | 3.8E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 5.7E-06 |
| | | | Dermal | BARIUM | 1.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CADMIUM | 4.5E+00 | mg/kg | 1.5E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 4.4E+02 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 5.0E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.7E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.8E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 1.7E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.9E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 8.1E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | NICKEL | 3.3E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 1.6E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 2.4E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ZINC | 4.9E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.4E-01 | mg/kg | 6.2E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.2E-08 |
| | | | Dermal | AROCLOR-1260 | 5.8E-02 | mg/kg | 2.6E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 5.3E-09 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 7.1E-01 | mg/kg | 2.0E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.0E-08 (a) |
| | | | Dermal | BENZO(A)PYRENE | 7.0E-01 | mg/kg | 1.9E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.9E-07 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 9.5E-01 | mg/kg | 2.6E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.6E-08 (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.9E-01 | mg/kg | 5.2E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 5.2E-08 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 3.9E-01 | mg/kg | 1.1E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.1E-08 (a) |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **6.0E-06** |
| Surface Water | Surface Water | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 6.2E+00 | mg/L | 1.0E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 3.4E-03 | mg/L | 5.5E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 1.1E-01 | mg/L | 1.8E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.6E-07 |
| | | | Dermal | BARIUM | 4.5E-01 | mg/L | 7.4E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CADMIUM | 2.5E-03 | mg/L | 4.1E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 1.2E-01 | mg/L | 1.2E-06 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 2.5E-05 (a) |
| | | | Dermal | COBALT | 2.7E-03 | mg/L | 1.8E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 2.8E-02 | mg/L | 4.6E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 8.6E-03 | mg/L | 1.4E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 1.4E+01 | mg/L | 2.2E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | HC | Dermal | LEAD | 2.4E-01 | mg/L | 3.9E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.6E-01 | mg/L | 2.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MERCURY | 2.0E-04 | mg/L | 3.3E-10 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 5.4E-03 | mg/L | 8.8E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 5.1E-03 | mg/L | 8.3E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ZINC | 4.8E-01 | mg/L | 4.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **2E-05** |
| **Exposure Point Total (HC)** | | | | | | | | | | | **2E-03** |
| Soil | Soil (0-2 ft bgs) | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 4.6E+03 | mg/kg | 2.2E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 3.6E+00 | mg/kg | 1.7E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 8.4E+00 | mg/kg | 2.4E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 3.6E-06 |
| | | | Ingestion | CHROMIUM | 1.8E+01 | mg/kg | 6.3E-05 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 3.2E-05 (a) |
| | | | Ingestion | COBALT | 8.7E-01 | mg/kg | 4.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 3.7E-01 | mg/kg | 1.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 7.8E+03 | mg/kg | 3.7E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 2.1E+02 | mg/kg | 1.0E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 4.4E-01 | mg/kg | 2.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 1.3E-01 | mg/kg | 4.3E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 4.3E-07 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.6E-01 | mg/kg | 8.8E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 8.8E-08 (a) |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **3.6E-05** |
| Soil | Soil (0-2 ft bgs) | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 4.6E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 3.6E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 8.4E+00 | mg/kg | 2.8E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 4.2E-07 |
| | | | Dermal | CHROMIUM | 1.8E+01 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 8.7E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 3.7E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 7.8E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 4.4E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 1.3E-01 | mg/kg | 1.2E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.2E-07 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.6E-01 | mg/kg | 2.4E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.4E-08 (a) |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **5.7E-07** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Particulates in Air | KWL | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 1.4E-06 | mg/m3 | 1.7E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ANTIMONY | 1.1E-09 | mg/m3 | 1.3E-08 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | ARSENIC | 2.6E-09 | mg/m3 | 3.1E-08 | µg/m3 | 4.3E-03 | (µg/m3)-1 | 1.3E-10 |
| | | | Inhalation | CHROMIUM | 5.7E-09 | mg/m3 | 3.6E-07 | µg/m3 | 8.4E-02 | (µg/m3)-1 | 3.0E-08 (a) |
| | | | Inhalation | COBALT | 2.7E-10 | mg/m3 | 3.2E-09 | µg/m3 | 9.0E-03 | (µg/m3)-1 | 2.8E-11 |
| | | | Inhalation | CYANIDE | 4.9E-06 | mg/m3 | 5.8E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | IRON | 2.4E-06 | mg/m3 | 2.8E-05 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | LEAD | 6.6E-08 | mg/m3 | 7.7E-07 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | THALLIUM | 1.4E-10 | mg/m3 | 1.6E-09 | µg/m3 | NA | (µg/m3)-1 | NA |
| | | | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)PYRENE | 3.9E-11 | mg/m3 | 2.5E-09 | µg/m3 | 6.0E-04 | (µg/m3)-1 | 1.5E-12 (a) |
| | | | Inhalation | BENZO(B)FLUORANTHENE | 7.9E-11 | mg/m3 | 5.0E-09 | µg/m3 | 6.0E-05 | (µg/m3)-1 | 3.0E-13 (a) |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **3.0E-08** |
| Sediment | Sediment | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.6E+04 | mg/kg | 2.2E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 2.0E+00 | mg/kg | 2.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 8.8E+01 | mg/kg | 7.3E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.1E-05 |
| | | | Ingestion | CADMIUM | 7.7E+00 | mg/kg | 1.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 1.7E+02 | mg/kg | 1.7E-04 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 8.7E-05 (a) |
| | | | Ingestion | COBALT | 8.6E+00 | mg/kg | 1.2E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 2.1E+02 | mg/kg | 2.9E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 4.1E+00 | mg/kg | 5.6E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 2.7E+04 | mg/kg | 3.7E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.0E+03 | mg/kg | 1.4E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.4E+02 | mg/kg | 2.0E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | NICKEL | 3.7E+01 | mg/kg | 5.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 4.7E-01 | mg/kg | 6.4E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 2.6E+01 | mg/kg | 3.6E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.6E-01 | mg/kg | 2.3E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 4.5E-08 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 1.1E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.1E-07 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 1.1E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.1E-06 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 1.4E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.4E-07 (a) |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 1.2E-06 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 1.2E-08 (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 1.6E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.6E-07 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 4.2E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.2E-08 (a) |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **9.9E-05** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.6E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 2.0E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 8.8E+01 | mg/kg | 8.6E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.3E-06 |
| | | | Dermal | CADMIUM | 7.7E+00 | mg/kg | 2.5E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 1.7E+02 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 8.6E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 2.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.1E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 2.7E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.4E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | NICKEL | 3.7E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 4.7E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 2.6E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.6E-01 | mg/kg | 7.5E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.5E-08 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 3.1E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.1E-08 (a) |
| | | | Dermal | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 2.9E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.9E-07 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 3.8E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.8E-08 (a) |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 3.3E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 3.3E-09 (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 4.5E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 4.5E-08 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 1.1E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.1E-08 (a) |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **1.7E-06** |
| Surface Water | Surface Water | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.4E+00 | mg/L | 2.2E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 3.7E-03 | mg/L | 6.0E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 1.7E-02 | mg/L | 2.7E-08 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 4.1E-08 |
| | | | Dermal | CHROMIUM | 5.3E-03 | mg/L | 5.6E-08 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 1.1E-06 (a) |
| | | | Dermal | COBALT | 1.6E-03 | mg/L | 1.0E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 1.8E-03 | mg/L | 2.9E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 3.6E+00 | mg/L | 5.9E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.9E-02 | mg/L | 4.8E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 8.0E-02 | mg/L | 1.3E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 5.8E-03 | mg/L | 9.5E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1E-06** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **1E-04** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | Value | Units | Value | Units | Value | Units | |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

(a) The mutagen risks were calculated for COPCs identified as having a mutagenic mode of action.

**Ingestion - Soil**

$$\text{Intake Factor (IF)} = \frac{\text{IR x FS x EF x ED x CF x ADAF}}{\text{BW x AT}} =$$

| | | Non-mutagens | Mutagens[a] | |
|---|---|---|---|---|
| | | 4.7E-07 (Child) | 2.6E-06 (0-2 years) | 8.1E-07 (2-6 years) |
| IR | Ingestion Rate (mg/day) | 200 | 200 | 200 |
| FS | Fraction from Contaminated Source | 1 | 1 | 1 |
| EF | Soil Ingestion Exposure Frequency (days/year) | 150 | 150 | 150 |
| ED | Soil Ingestion Exposure Duration (years) | 6 | 2 | 4 |
| CF | Conversion Factor (kg/mg) | 0.000001 | 0.000001 | 0.000001 |
| BW | Body Weight (kg) | 15 | 9 | 17 |
| AT | Averaging Time (days) | 25,550 | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 10 | 3 |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{soil} * IF * B$

(B) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Dermal - Soil**

$$\text{Intake Factor (IF)} = \frac{\text{SA x AF x EF x ED x CF x ADAF}}{\text{BW x AT}} =$$

| | | Non-mutagens | Mutagens[a] | |
|---|---|---|---|---|
| | | 1.1E-06 (Child) | 5.1E-06 (0-2 years) | 2.1E-06 (2-6 years) |
| SA | Surface Area Exposed to Soil ($cm^2$/day) | 2,373 | 1,954 | 2,591 |
| AF | Soil Skin Adherence Factor ($mg/cm^2$) | 0.2 | 0.2 | 0.2 |
| EF | Soil Dermal Exposure Frequency (days/year) | 150 | 150 | 150 |
| ED | Soil Dermal Exposure Duration (years) | 6 | 2 | 4 |
| CF | Conversion Factor (kg/mg) | 0.000001 | 0.000001 | 0.000001 |
| BW | Body Weight (kg) | 15 | 9 | 17 |
| AT | Averaging Time (days) | 25,550 | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 10 | 3 |

$Intake_{derm}(mg/kg{\cdot}d) = EPC_{soil} * IF * ABS$

(ABS) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |

**Inhalation - Soil**

$$\text{Intake Factor (IF)} = \frac{EF \times ED \times ET \times CF1 \times CF2 \times ADAF}{AT} =$$

| | | Non-mutagens | Mutagens[a] | |
|---|---|---|---|---|
| | | 1.2E+01 | 3.9E+01 | 2.3E+01 |
| | | (Child) | (0-2 years) | (2-6 years) |
| EF | Soil Exposure Frequency (days/year) | 150 | 150 | 150 |
| ED | Soil Exposure Duration (years) | 6 | 2 | 4 |
| ET | Soil Exposure Time (hours/day) | 8 | 8 | 8 |
| CF1 | Conversion Factor (days/hours) | 0.042 | 0.042 | 0.042 |
| CF2 | Conversion Factor (µg/mg) | 1,000 | 1,000 | 1,000 |
| AT | Averaging Time (days) | 25,550 | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 10 | 3 |

$EPC_{air} = EPC_{soil}$ x [1/Volatilization Factor (VF) + 1/Particulate Emissions Factor (PEF)]

Exposure = $EPC_{air}$ x IF

Cancer Risk = Exposure x Inhalation Unit Risk (IUR)

**Ingestion - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{IR \times FS \times EF \times ED \times CF \times ADAF}{BW \times AT} =$$

| | | Non-mutagens | Mutagens[a] | |
|---|---|---|---|---|
| | | 1.4E-07 | 7.7E-07 | 2.4E-07 |
| | | (Child) | (0-2 years) | (2-6 years) |
| IR | Ingestion Rate (mg/day) | 200 | 200 | 200 |
| FS | Fraction from Contaminated Source | 1 | 1 | 1 |
| EF | Sediment Ingestion Exposure Frequency (days/year) | 44 | 44 | 44 |
| ED | Sediment Ingestion Exposure Duration (years) | 6 | 2 | 4 |
| CF | Conversion Factor (kg/mg) | 0.000001 | 0.000001 | 0.000001 |
| BW | Body Weight (kg) | 15 | 9 | 17 |
| AT | Averaging Time (days) | 25,550 | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 10 | 3 |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{sediment}$*IF*B

(B) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |

**Dermal - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{SA \times AF \times EF \times ED \times CF \times ADAF}{BW \times AT} =$$

| | | Non-mutagens | Mutagens[a] | |
|---|---|---|---|---|
| | | 3.3E-07 | 1.5E-06 | 6.2E-07 |
| | | (Child) | (0-2 years) | (2-6 years) |
| SA | Surface Area Exposed to Sediment (cm²/day) | 2,373 | 1,954 | 2,591 |
| AF | Sediment Skin Adherence Factor (mg/cm²) | 0.2 | 0.2 | 0.2 |
| EF | Sediment Dermal Exposure Frequency (days/year) | 44 | 44 | 44 |
| ED | Sediment Dermal Exposure Duration (years) | 6 | 2 | 4 |
| CF | Conversion Factor (kg/mg) | 0.000001 | 0.000001 | 0.000001 |
| BW | Body Weight (kg) | 15 | 9 | 17 |
| AT | Averaging Time (days) | 25,550 | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 10 | 3 |

$Intake_{derm}(mg/kg{\cdot}d) = EPC_{sediment} * IF * ABS$

(ABS) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Dermal - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{SA \times EV \times EF \times ED \times ADAF}{BW \times AT} =$$

| | | Non-mutagens | Mutagens[a] | |
|---|---|---|---|---|
| | | 1.6E+00 | 7.5E+00 | 3.1E+00 |
| | | (Child) | (0-2 years) | (2-6 years) |
| SA | Surface Area Exposed to Surface Water (cm²) | 2,373 | 1,954 | 2,591 |
| EF | Surface Water Dermal Exposure Frequency (days/year) | 44 | 44 | 44 |
| ED | Surface Water Dermal Exposure Duration (years) | 6 | 2 | 4 |
| EV | Events per Day (events/day) | 1 | 1 | 1 |
| BW | Body Weight (kg) | 15 | 9 | 17 |
| AT | Averaging Time (days) | 25,550 | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 10 | 3 |

$Intake_{derm}(mg/kg{\cdot}d)$ = IF x Absorbed Dose per Event ($DA_{event}$)

($DA_{event}$) presented in Table 4.6

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Calculation of Lifetime Average Daily Dose for Recreator - Trichloroethylene in Sediment**

$Intake\ Factor_{ing} = [(CAF_o * (IF_{child} + IF_{adult})) + (MAF_o * (IF_{0\text{-}2} + IF_{2\text{-}6} + IF_{6\text{-}16} + IF_{16\text{-}26}))]$

| | | |
|---|---|---|
| Age-dependent adjustment factor for carcinogens - oral slope factor | $CAF_o$ | 0.804 |
| Age-dependent adjustment factor for mutagens - oral slope factor | $MAF_o$ | 0.202 |

$Intake\ Factor_{derm} = [(CAF_o * (IF_{child} + IF_{adult}) + MAF_o * (IF_{0\text{-}2} + IF_{2\text{-}6} + IF_{6\text{-}16} + IF_{16\text{-}26}))]$

**Table 7.4**
**Calculation of Chemical Cancer Risks for Swimmer**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.0E+03 | mg/kg | 4.0E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 2.3E+00 | mg/kg | 3.0E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 9.8E+00 | mg/kg | 7.9E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.2E-06 |
| | | | Ingestion | CHROMIUM | 1.6E+01 | mg/kg | 2.1E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 1.1E-06 |
| | | | Ingestion | COBALT | 6.2E+00 | mg/kg | 8.2E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.0E+02 | mg/kg | 1.4E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 2.7E+00 | mg/kg | 3.6E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 8.0E+03 | mg/kg | 1.1E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.7E+02 | mg/kg | 2.3E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 1.5E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 8.6E-01 | mg/kg | 1.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 6.5E-02 | mg/kg | 8.7E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.7E-08 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 2.6E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.6E-07 |
| | | | Ingestion | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 2.0E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.0E-06 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 3.9E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.9E-07 |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 8.4E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 8.4E-09 |
| | | | Ingestion | CHRYSENE | 3.0E+01 | mg/kg | 4.0E-06 | mg/kg-d | 1.0E-03 | (mg/kg-d)-1 | 4.0E-09 |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 2.0E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.0E-07 |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 5.4E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 5.4E-08 |
| | | | Ingestion | **TICs** | | | | | | | |
| | | | Ingestion | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 1.6E-06 | mg/kg-d | 1.2E+00 | (mg/kg-d)-1 | 1.9E-06 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **7.1E-06** |
| Sediment | Sediment | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 2.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 9.8E+00 | mg/kg | 4.8E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 7.1E-07 |
| | | | Dermal | CHROMIUM | 1.6E+01 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 6.2E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.0E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 2.7E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 8.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.7E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 8.6E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 6.5E-02 | mg/kg | 1.5E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 2.9E-08 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 4.1E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.1E-07 |
| | | | Dermal | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 3.1E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.1E-06 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 6.2E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 6.2E-07 |
| | | | Dermal | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 1.3E-06 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 1.3E-08 |
| | | | Dermal | CHRYSENE | 3.0E+01 | mg/kg | 6.2E-06 | mg/kg-d | 1.0E-03 | (mg/kg-d)-1 | 6.2E-09 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 3.1E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.1E-07 |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 8.5E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 8.5E-08 |
| | | | Dermal | **TICs** | | | | | | | |
| | | | Dermal | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 2.5E-06 | mg/kg-d | 1.2E+00 | (mg/kg-d)-1 | 3.0E-06 |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **8.3E-06** |
| Surface Water | Surface Water | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ARSENIC | 7.8E-03 | mg/L | 1.9E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.8E-06 |
| | | | Ingestion | CHROMIUM | 2.6E-03 | mg/L | 6.1E-07 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 3.0E-07 |
| | | | Ingestion | COBALT | 2.1E-03 | mg/L | 5.0E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 4.4E-03 | mg/L | 1.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 1.1E+01 | mg/L | 2.7E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 9.5E-01 | mg/L | 2.2E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 1.6E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.6E-09 |
| | | | Ingestion | BENZO(A)PYRENE | 2.0E-04 | mg/L | 4.7E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 4.7E-08 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 3.2E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.2E-09 |
| | | | Ingestion | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 4.2E-07 | mg/kg-d | 1.4E-02 | (mg/kg-d)-1 | 5.9E-09 |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 1.6E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.6E-08 |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 2.1E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.1E-09 |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **3E-06** |
| Surface Water | Surface Water | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ARSENIC | 7.8E-03 | mg/L | 4.7E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 7.0E-07 |
| | | | Dermal | CHROMIUM | 2.6E-03 | mg/L | 1.5E-07 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 3.1E-06 |
| | | | Dermal | COBALT | 2.1E-03 | mg/L | 5.1E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.4E-03 | mg/L | 2.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 1.1E+01 | mg/L | 6.8E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 9.5E-01 | mg/L | 5.7E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | SL | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 5.8E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 5.8E-07 |
| | | | Dermal | BENZO(A)PYRENE | 2.0E-04 | mg/L | 2.6E-05 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.6E-05 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 1.0E-05 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.0E-06 |
| | | | Dermal | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 7.2E-04 | mg/kg-d | 1.4E-02 | (mg/kg-d)-1 | 1.0E-05 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 8.4E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 8.4E-06 |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 1.4E-05 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.4E-06 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **5E-05** |
| **Exposure Point Total (SL)** | | | | | | | | | | | **7E-05** |
| Sediment | Sediment | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.5E+04 | mg/kg | 2.0E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 7.3E+00 | mg/kg | 9.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 2.8E+02 | mg/kg | 2.3E-05 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 3.4E-05 |
| | | | Ingestion | CADMIUM | 1.3E+01 | mg/kg | 1.8E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 1.6E+02 | mg/kg | 2.1E-05 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 1.0E-05 |
| | | | Ingestion | COBALT | 1.7E+01 | mg/kg | 2.2E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.8E+02 | mg/kg | 2.3E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 1.5E+01 | mg/kg | 2.0E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 4.2E+04 | mg/kg | 5.6E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.5E+03 | mg/kg | 2.0E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 1.5E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 5.6E+01 | mg/kg | 7.5E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ZINC | 1.1E+03 | mg/kg | 1.5E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 8.0E-02 | mg/kg | 1.1E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 2.1E-08 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 1.8E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.8E-08 |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 1.8E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.8E-07 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 2.7E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.7E-08 |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 2.6E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 2.6E-09 |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 3.8E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.8E-08 |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 1.0E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.0E-08 |
| | | | Ingestion | NAPHTHALENE | 2.8E+00 | mg/kg | 3.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **VOCs** | | | | | | | |
| | | | Ingestion | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | 8.9E-09 | mg/kg-d | 4.6E-02 | (mg/kg-d)-1 | 4.1E-10 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **4.5E-05** |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.5E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 7.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 2.8E+02 | mg/kg | 1.4E-05 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.1E-05 |
| | | | Dermal | CADMIUM | 1.3E+01 | mg/kg | 2.2E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 1.6E+02 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 1.7E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.8E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 1.5E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 4.2E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.5E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 5.6E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ZINC | 1.1E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 8.0E-02 | mg/kg | 1.8E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 3.6E-08 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 2.8E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.8E-08 |
| | | | Dermal | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 2.9E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.9E-07 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 4.2E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.2E-08 |
| | | | Dermal | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 4.1E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 4.1E-09 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 6.0E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 6.0E-08 |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 1.6E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.6E-08 |
| | | | Dermal | NAPHTHALENE | 2.8E+00 | mg/kg | 6.0E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **VOCs** | | | | | | | |
| | | | Dermal | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | NA | mg/kg-d | 4.6E-02 | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **2.1E-05** |
| Surface Water | Surface Water | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.3E+00 | mg/L | 3.0E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 1.2E-03 | mg/L | 2.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 3.1E-02 | mg/L | 7.3E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.1E-05 |
| | | | Ingestion | CADMIUM | 6.2E-04 | mg/L | 1.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 4.5E-03 | mg/L | 1.1E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 5.3E-07 |
| | | | Ingestion | COBALT | 1.0E-03 | mg/L | 2.4E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 2.0E-03 | mg/L | 4.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 6.5E+00 | mg/L | 1.5E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 2.6E-02 | mg/L | 6.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 7.0E-02 | mg/L | 1.7E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 1.2E-03 | mg/L | 2.9E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 2.5E-03 | mg/L | 5.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | BWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 3.4E-05 | mg/L | 8.1E-09 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 8.1E-09 |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **1E-05** |
| Surface Water | Surface Water | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.3E+00 | mg/L | 7.7E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 1.2E-03 | mg/L | 6.9E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 3.1E-02 | mg/L | 1.8E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.7E-06 |
| | | | Dermal | CADMIUM | 6.2E-04 | mg/L | 3.7E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 4.5E-03 | mg/L | 2.7E-07 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 5.4E-06 |
| | | | Dermal | COBALT | 1.0E-03 | mg/L | 2.4E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 2.0E-03 | mg/L | 1.2E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 6.5E+00 | mg/L | 3.9E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.6E-02 | mg/L | 1.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 7.0E-02 | mg/L | 4.2E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 1.2E-03 | mg/L | 7.4E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 2.5E-03 | mg/L | 1.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 3.4E-05 | mg/L | 4.4E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 4.4E-06 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1E-05** |
| **Exposure Point Total (BWL)** | | | | | | | | | | | **9E-05** |
| Sediment | Sediment | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.6E+04 | mg/kg | 2.2E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 2.0E+00 | mg/kg | 2.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 8.8E+01 | mg/kg | 7.1E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.1E-05 |
| | | | Ingestion | CADMIUM | 7.7E+00 | mg/kg | 1.0E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 1.7E+02 | mg/kg | 2.3E-05 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 1.2E-05 |
| | | | Ingestion | COBALT | 8.6E+00 | mg/kg | 1.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 2.1E+02 | mg/kg | 2.8E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 4.1E+00 | mg/kg | 5.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 2.7E+04 | mg/kg | 3.5E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.0E+03 | mg/kg | 1.4E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.4E+02 | mg/kg | 1.9E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | NICKEL | 3.7E+01 | mg/kg | 4.9E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 4.7E-01 | mg/kg | 6.2E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 2.6E+01 | mg/kg | 3.5E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.6E-01 | mg/kg | 2.2E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 4.4E-08 |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | KWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 1.5E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.5E-08 |
| | | | Ingestion | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 1.4E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.4E-07 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 1.8E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.8E-08 |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 1.6E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 1.6E-09 |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 2.2E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.2E-08 |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 5.5E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 5.5E-09 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **2.2E-05** |
| Sediment | Sediment | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.6E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 2.0E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 8.8E+01 | mg/kg | 4.3E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 6.4E-06 |
| | | | Dermal | CADMIUM | 7.7E+00 | mg/kg | 1.2E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 1.7E+02 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 8.6E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 2.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.1E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 2.7E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.4E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | NICKEL | 3.7E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 4.7E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 2.6E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.6E-01 | mg/kg | 3.7E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 7.4E-08 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 2.4E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.4E-08 |
| | | | Dermal | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 2.2E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.2E-07 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 2.9E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.9E-08 |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 2.5E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 2.5E-09 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 3.4E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.4E-08 |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 8.7E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 8.7E-09 |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **6.8E-06** |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.4E+00 | mg/L | 3.3E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 3.7E-03 | mg/L | 8.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 1.7E-02 | mg/L | 4.0E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 5.9E-06 |
| | | | Ingestion | CHROMIUM | 5.3E-03 | mg/L | 1.3E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 6.3E-07 |
| | | | Ingestion | COBALT | 1.6E-03 | mg/L | 3.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 1.8E-03 | mg/L | 4.2E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 3.6E+00 | mg/L | 8.5E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 2.9E-02 | mg/L | 7.0E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 8.0E-02 | mg/L | 1.9E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 5.8E-03 | mg/L | 1.4E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **7E-06** |
| Surface Water | Surface Water | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.4E+00 | mg/L | 8.2E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 3.7E-03 | mg/L | 2.2E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 1.7E-02 | mg/L | 1.0E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.5E-06 |
| | | | Dermal | CHROMIUM | 5.3E-03 | mg/L | 3.2E-07 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 6.4E-06 |
| | | | Dermal | COBALT | 1.6E-03 | mg/L | 3.8E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 1.8E-03 | mg/L | 1.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 3.6E+00 | mg/L | 2.1E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.9E-02 | mg/L | 1.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 8.0E-02 | mg/L | 4.8E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 5.8E-03 | mg/L | 3.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **8E-06** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **4E-05** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

**Ingestion - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{\text{IR x FS x EF x ED x CF}}{\text{BW x AT}} = 1.3\text{E-}07 \text{ (Adult)}$$

| | | |
|---|---|---|
| IR | Ingestion Rate (mg/day) | 100 |
| FS | Fraction from Contaminated Source | 1 |
| EF | Sediment Ingestion Exposure Frequency (days/year) | 105 |
| ED | Sediment Ingestion Exposure Duration (years) | 26 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 80 |
| AT | Averaging Time (days) | 25,550 |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{sediment} * IF * B$

(B) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |

**Dermal - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{SA \times AF \times EF \times ED \times CF}{BW \times AT}$$

| | | |
|---|---|---|
| = | 1.6E-06 | (Adult) |
| SA | Surface Area Exposed to Sediment ($cm^2$/day) | 6,032 |
| AF | Sediment Skin Adherence Factor ($mg/cm^2$) | 0.2 |
| EF | Sediment Dermal Exposure Frequency (days/year) | 105 |
| ED | Sediment Dermal Exposure Duration (years) | 26 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 80 |
| AT | Averaging Time (days) | 25,550 |

$Intake_{derm}(mg/kg{\cdot}d) = EPC_{sediment} * IF * ABS$

(ABS) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Ingestion - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{IR \times FR \times ET \times EF \times ED}{BW \times AT}$$

| | | |
|---|---|---|
| = | 2.4E-04 | (Adult) |
| IR | Ingestion Rate - Surface Water (L/hour) | 0.071 |
| FS | Fraction from Contaminated Source | 1 |
| ET | Surface Water Exposure Time (hours/day) | 2.5 |
| EF | Surface Water Ingestion Exposure Frequency (days/year) | 105 |
| ED | Surface Water Exposure Duration (years) | 26 |
| BW | Body Weight (kg) | 80 |
| AT | Averaging Time (days) | 25,550 |

$Intake_{ing}(mg/kg\text{-}d) = EPC_{sw} \times IF$

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Dermal - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{SA \times EV \times EF \times ED}{BW \times AT}$$

| | | |
|---|---|---|
| = | 2.6E+01 | (Adult) |
| SA | Surface Area Exposed to Surface Water ($cm^2$) | 19,652 |
| EF | Surface Water Dermal Exposure Frequency (days/year) | 105 |
| ED | Surface Water Dermal Exposure Duration (years) | 26 |
| EV | Events per Day (events/day) | 1 |
| BW | Body Weight (kg) | 80 |
| AT | Averaging Time (days) | 25,550 |

$Intake_{derm}(mg/kg{\cdot}d) = IF \times \text{Absorbed Dose per Event } (DA_{event})$

($DA_{event}$) presented in Table 4.6

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Table 7.5**
**Calculation of Chemical Cancer Risks for Swimmer**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.0E+03 | mg/kg | 2.8E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 2.3E+00 | mg/kg | 2.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 9.8E+00 | mg/kg | 5.5E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 8.2E-07 |
| | | | Ingestion | CHROMIUM | 1.6E+01 | mg/kg | 4.5E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 2.2E-06 (a) |
| | | | Ingestion | COBALT | 6.2E+00 | mg/kg | 5.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.0E+02 | mg/kg | 9.4E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 2.7E+00 | mg/kg | 2.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 8.0E+03 | mg/kg | 7.4E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.7E+02 | mg/kg | 1.6E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 1.0E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 8.6E-01 | mg/kg | 8.0E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 6.5E-02 | mg/kg | 6.0E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.2E-08 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 5.5E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 5.5E-07 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 4.1E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 4.1E-06 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 8.2E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 8.2E-07 (a) |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 1.7E-06 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 1.7E-08 (a) |
| | | | Ingestion | CHRYSENE | 3.0E+01 | mg/kg | 8.3E-06 | mg/kg-d | 1.0E-03 | (mg/kg-d)-1 | 8.3E-09 (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 4.2E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 4.2E-07 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 1.1E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.1E-07 (a) |
| | | | Ingestion | **TICs** | | | | | | | |
| | | | Ingestion | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 1.1E-06 | mg/kg-d | 1.2E+00 | (mg/kg-d)-1 | 1.3E-06 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **1.0E-05** |
| Sediment | Sediment | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 2.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 9.8E+00 | mg/kg | 2.5E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 3.8E-07 |
| | | | Dermal | CHROMIUM | 1.6E+01 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 6.2E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.0E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 2.7E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 8.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.7E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 8.6E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | | |
| | | | | | | | Value | Units | Value | Units | | |
| Sediment | Sediment | SL | Dermal | **PEST/PCB** | | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 6.5E-02 | mg/kg | 7.8E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.6E-08 | |
| | | | Dermal | **SVOCs** | | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 6.6E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 6.6E-07 | (a) |
| | | | Dermal | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 4.9E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 4.9E-06 | (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 9.9E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 9.9E-07 | (a) |
| | | | Dermal | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 2.1E-06 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 2.1E-08 | (a) |
| | | | Dermal | CHRYSENE | 3.0E+01 | mg/kg | 1.0E-05 | mg/kg-d | 1.0E-03 | (mg/kg-d)-1 | 1.0E-08 | (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 5.0E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 5.0E-07 | (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 1.4E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.4E-07 | (a) |
| | | | Dermal | **TICs** | | | | | | | | |
| | | | Dermal | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 1.3E-06 | mg/kg-d | 1.2E+00 | (mg/kg-d)-1 | 1.6E-06 | |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **9.2E-06** | |
| Surface Water | Surface Water | SL | Ingestion | **Metals** | | | | | | | | |
| | | | Ingestion | ARSENIC | 7.8E-03 | mg/L | 1.0E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.6E-06 | |
| | | | Ingestion | CHROMIUM | 2.6E-03 | mg/L | 1.0E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 5.1E-07 | (a) |
| | | | Ingestion | COBALT | 2.1E-03 | mg/L | 2.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Ingestion | CYANIDE | 4.4E-03 | mg/L | 5.9E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Ingestion | IRON | 1.1E+01 | mg/L | 1.5E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Ingestion | MANGANESE | 9.5E-01 | mg/L | 1.3E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Ingestion | **SVOCs** | | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 2.7E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.7E-09 | (a) |
| | | | Ingestion | BENZO(A)PYRENE | 2.0E-04 | mg/L | 7.9E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 7.9E-08 | (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 5.3E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 5.3E-09 | (a) |
| | | | Ingestion | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 2.4E-07 | mg/kg-d | 1.4E-02 | (mg/kg-d)-1 | 3.3E-09 | |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 2.7E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.7E-08 | (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 3.5E-08 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.5E-09 | (a) |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **2E-06** | |
| Surface Water | Surface Water | SL | Dermal | **Metals** | | | | | | | | |
| | | | Dermal | ARSENIC | 7.8E-03 | mg/L | 1.9E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.9E-07 | |
| | | | Dermal | CHROMIUM | 2.6E-03 | mg/L | 1.9E-07 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 3.8E-06 | (a) |
| | | | Dermal | COBALT | 2.1E-03 | mg/L | 2.1E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | CYANIDE | 4.4E-03 | mg/L | 1.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | IRON | 1.1E+01 | mg/L | 2.8E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | MANGANESE | 9.5E-01 | mg/L | 2.3E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | **SVOCs** | | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 7.7E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 7.7E-07 | (a) |
| | | | Dermal | BENZO(A)PYRENE | 2.0E-04 | mg/L | 3.4E-05 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.4E-05 | (a) |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | SL | Dermal | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 1.3E-05 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.3E-06 (a) |
| | | | Dermal | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 3.2E-04 | mg/kg-d | 1.4E-02 | (mg/kg-d)-1 | 4.5E-06 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 1.1E-05 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.1E-05 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 1.8E-05 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.8E-06 (a) |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **6E-05** |
| **Exposure Point Total (SL)** | | | | | | | | | | | **8E-05** |
| Sediment | Sediment | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.5E+04 | mg/kg | 1.4E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 7.3E+00 | mg/kg | 6.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 2.8E+02 | mg/kg | 1.6E-05 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.4E-05 |
| | | | Ingestion | CADMIUM | 1.3E+01 | mg/kg | 1.2E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 1.6E+02 | mg/kg | 4.3E-05 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 2.2E-05 (a) |
| | | | Ingestion | COBALT | 1.7E+01 | mg/kg | 1.6E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.8E+02 | mg/kg | 1.6E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 1.5E+01 | mg/kg | 1.4E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 4.2E+04 | mg/kg | 3.9E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.5E+03 | mg/kg | 1.4E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 1.0E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 5.6E+01 | mg/kg | 5.2E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ZINC | 1.1E+03 | mg/kg | 1.0E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 8.0E-02 | mg/kg | 7.4E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.5E-08 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 3.7E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.7E-08 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 3.8E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.8E-07 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 5.6E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 5.6E-08 (a) |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 5.5E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 5.5E-09 (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 7.9E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 7.9E-08 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 2.1E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.1E-08 (a) |
| | | | Ingestion | NAPHTHALENE | 2.8E+00 | mg/kg | 2.6E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **VOCs** | | | | | | | |
| | | | Ingestion | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | 8.7E-09 | mg/kg-d | 4.6E-02 | (mg/kg-d)-1 | 4.0E-10 (a) |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **4.6E-05** |
| Sediment | Sediment | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.5E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 7.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 2.8E+02 | mg/kg | 7.3E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.1E-05 |
| | | | Dermal | CADMIUM | 1.3E+01 | mg/kg | 1.1E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | | |
| | | | | | | | Value | Units | Value | Units | | |
| Sediment | Sediment | BWL | Dermal | CHROMIUM | 1.6E+02 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA | |
| | | | Dermal | COBALT | 1.7E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | COPPER | 1.8E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | CYANIDE | 1.5E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | IRON | 4.2E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | LEAD | 1.5E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | VANADIUM | 5.6E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | ZINC | 1.1E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | **PEST/PCB** | | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 8.0E-02 | mg/kg | 9.7E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.9E-08 | |
| | | | Dermal | **SVOCs** | | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 4.5E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.5E-08 | (a) |
| | | | Dermal | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 4.6E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 4.6E-07 | (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 6.8E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 6.8E-08 | (a) |
| | | | Dermal | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 6.6E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 6.6E-09 | (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 9.6E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 9.6E-08 | (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 2.5E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.5E-08 | (a) |
| | | | Dermal | NAPHTHALENE | 2.8E+00 | mg/kg | 3.2E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | **VOCs** | | | | | | | | |
| | | | Dermal | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | NA | mg/kg-d | 4.6E-02 | (mg/kg-d)-1 | NA | |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **1.2E-05** | |
| Surface Water | Surface Water | BWL | Ingestion | **Metals** | | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.3E+00 | mg/L | 1.7E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Ingestion | ANTIMONY | 1.2E-03 | mg/L | 1.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Ingestion | ARSENIC | 3.1E-02 | mg/L | 4.0E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 6.1E-06 | |
| | | | Ingestion | CADMIUM | 6.2E-04 | mg/L | 8.2E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Ingestion | CHROMIUM | 4.5E-03 | mg/L | 1.8E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 8.9E-07 | (a) |
| | | | Ingestion | COBALT | 1.0E-03 | mg/L | 1.3E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Ingestion | CYANIDE | 2.0E-03 | mg/L | 2.6E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Ingestion | IRON | 6.5E+00 | mg/L | 8.6E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Ingestion | LEAD | 2.6E-02 | mg/L | 3.4E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Ingestion | MANGANESE | 7.0E-02 | mg/L | 9.3E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Ingestion | THALLIUM | 1.2E-03 | mg/L | 1.6E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Ingestion | VANADIUM | 2.5E-03 | mg/L | 3.2E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Ingestion | **SVOCs** | | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 3.4E-05 | mg/L | 1.3E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.3E-08 | (a) |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **7E-06** | |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.3E+00 | mg/L | 3.2E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 1.2E-03 | mg/L | 2.8E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 3.1E-02 | mg/L | 7.6E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.1E-06 |
| | | | Dermal | CADMIUM | 6.2E-04 | mg/L | 1.5E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 4.5E-03 | mg/L | 3.3E-07 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 6.7E-06 (a) |
| | | | Dermal | COBALT | 1.0E-03 | mg/L | 1.0E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 2.0E-03 | mg/L | 5.0E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 6.5E+00 | mg/L | 1.6E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.6E-02 | mg/L | 6.3E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 7.0E-02 | mg/L | 1.7E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 1.2E-03 | mg/L | 3.1E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 2.5E-03 | mg/L | 6.1E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 3.4E-05 | mg/L | 5.9E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 5.9E-06 (a) |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1E-05** |
| **Exposure Point Total (BWL)** | | | | | | | | | | | **8E-05** |
| Sediment | Sediment | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.6E+04 | mg/kg | 1.5E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 2.0E+00 | mg/kg | 1.9E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 8.8E+01 | mg/kg | 4.9E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 7.3E-06 |
| | | | Ingestion | CADMIUM | 7.7E+00 | mg/kg | 7.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 1.7E+02 | mg/kg | 4.8E-05 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 2.4E-05 (a) |
| | | | Ingestion | COBALT | 8.6E+00 | mg/kg | 8.0E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 2.1E+02 | mg/kg | 1.9E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 4.1E+00 | mg/kg | 3.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 2.7E+04 | mg/kg | 2.5E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.0E+03 | mg/kg | 9.4E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.4E+02 | mg/kg | 1.3E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | NICKEL | 3.7E+01 | mg/kg | 3.4E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 4.7E-01 | mg/kg | 4.3E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 2.6E+01 | mg/kg | 2.4E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.6E-01 | mg/kg | 1.5E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 3.0E-08 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 3.2E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.2E-08 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 3.0E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.0E-07 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 3.9E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.9E-08 (a) |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | | |
| | | | | | | | Value | Units | Value | Units | | |
| Sediment | Sediment | KWL | Ingestion | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 3.4E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 3.4E-09 | (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 4.5E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 4.5E-08 | (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 1.2E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.2E-08 | (a) |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **3.2E-05** | |
| Sediment | Sediment | KWL | Dermal | **Metals** | | | | | | | | |
| | | | Dermal | ALUMINUM | 1.6E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | ANTIMONY | 2.0E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | ARSENIC | 8.8E+01 | mg/kg | 2.3E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 3.4E-06 | |
| | | | Dermal | CADMIUM | 7.7E+00 | mg/kg | 6.6E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | CHROMIUM | 1.7E+02 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA | |
| | | | Dermal | COBALT | 8.6E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | COPPER | 2.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | CYANIDE | 4.1E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | IRON | 2.7E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | LEAD | 1.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | MANGANESE | 1.4E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | NICKEL | 3.7E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | THALLIUM | 4.7E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | VANADIUM | 2.6E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | **PEST/PCB** | | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.6E-01 | mg/kg | 2.0E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 4.0E-08 | |
| | | | Dermal | **SVOCs** | | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 3.8E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.8E-08 | (a) |
| | | | Dermal | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 3.6E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.6E-07 | (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 4.6E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.6E-08 | (a) |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 4.1E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 4.1E-09 | (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 5.5E-08 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 5.5E-08 | (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 1.4E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.4E-08 | (a) |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **4.0E-06** | |
| Surface Water | Surface Water | KWL | Ingestion | **Metals** | | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.4E+00 | mg/L | 1.8E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Ingestion | ANTIMONY | 3.7E-03 | mg/L | 4.9E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Ingestion | ARSENIC | 1.7E-02 | mg/L | 2.2E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 3.3E-06 | |
| | | | Ingestion | CHROMIUM | 5.3E-03 | mg/L | 2.1E-06 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 1.1E-06 | (a) |
| | | | Ingestion | COBALT | 1.6E-03 | mg/L | 2.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Ingestion | CYANIDE | 1.8E-03 | mg/L | 2.4E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Ingestion | IRON | 3.6E+00 | mg/L | 4.7E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Ingestion | LEAD | 2.9E-02 | mg/L | 3.9E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Ingestion | MANGANESE | 8.0E-02 | mg/L | 1.0E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Ingestion | THALLIUM | 5.8E-03 | mg/L | 7.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **4E-06** | |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.4E+00 | mg/L | 3.4E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 3.7E-03 | mg/L | 9.2E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 1.7E-02 | mg/L | 4.1E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 6.2E-07 |
| | | | Dermal | CHROMIUM | 5.3E-03 | mg/L | 4.0E-07 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 7.9E-06 (a) |
| | | | Dermal | COBALT | 1.6E-03 | mg/L | 1.6E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 1.8E-03 | mg/L | 4.4E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 3.6E+00 | mg/L | 8.9E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.9E-02 | mg/L | 7.3E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 8.0E-02 | mg/L | 2.0E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 5.8E-03 | mg/L | 1.4E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **9E-06** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **5E-05** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

(a) The mutagen risks were calculated for COPCs identified as having a mutagenic mode of action.

**Ingestion - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{\text{IR x FS x EF x ED x CF x ADAF}}{\text{BW x AT}}$$

| | | Non-mutagens | Mutagens[a] |
|---|---|---|---|
| = | | 9.3E-08 (Adolescent) | 2.8E-07 (6-16 years) |
| IR | Ingestion Rate (mg/day) | 100 | 100 |
| FS | Fraction from Contaminated Source | 1 | 1 |
| EF | Sediment Ingestion Exposure Frequency (days/year) | 105 | 105 |
| ED | Sediment Ingestion Exposure Duration (years) | 10 | 10 |
| CF | Conversion Factor (kg/mg) | 0.000001 | 0.000001 |
| BW | Body Weight (kg) | 44 | 44 |
| AT | Averaging Time (days) | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 3 |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{sediment} * IF * B$

(B) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |

**Dermal - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{SA \times AF \times EF \times ED \times CF \times ADAF}{BW \times AT} =$$

| | Non-mutagens | Mutagens[a] |
|---|---|---|
| | 8.6E-07 | 2.6E-06 |
| | (Adolescent) | (6-16 years) |

| | | | |
|---|---|---|---|
| SA | Surface Area Exposed to Sediment ($cm^2$/day) | 4,639 | 4,639 |
| AF | Sediment Skin Adherence Factor ($mg/cm^2$) | 0.2 | 0.2 |
| EF | Sediment Dermal Exposure Frequency (days/year) | 105 | 105 |
| ED | Sediment Dermal Exposure Duration (years) | 10 | 10 |
| CF | Conversion Factor (kg/mg) | 0.000001 | 0.000001 |
| BW | Body Weight (kg) | 44 | 44 |
| AT | Averaging Time (days) | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 3 |

$Intake_{derm}(mg/kg{\cdot}d) = EPC_{sediment} * IF * ABS$

(ABS) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Ingestion - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{IR \times FR \times ET \times EF \times ED \times ADAF}{BW \times AT} =$$

| | Non-mutagens | Mutagens[a] |
|---|---|---|
| | 1.3E-04 | 3.96E-04 |
| | (Adolescent) | (6-16 years) |

| | | | |
|---|---|---|---|
| IR | Ingestion Rate - Surface Water (L/hour) | 0.071 | 0.071 |
| FS | Fraction from Contaminated Source | 1 | 1 |
| ET | Surface Water Exposure Time (hours/day) | 2.0 | 2.0 |
| EF | Surface Water Ingestion Exposure Frequency (days/year) | 105 | 105 |
| ED | Surface Water Exposure Duration (years) | 10 | 10 |
| BW | Body Weight (kg) | 44 | 44 |
| AT | Averaging Time (days) | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 3 |

$Intake_{ing}(mg/kg\text{-}d) = EPC_{sw} \times IF$

Cancer Risk = Intake x Cancer Slope Factor (CSF)

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |

**Dermal - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{\text{SA x EV x EF x ED x ADAF}}{\text{BW x AT}} =$$

| | | Non-mutagens | Mutagens[a] |
|---|---|---|---|
| | | 1.2E+01 (Adolescent) | 3.7E+01 (6-16 years) |
| SA | Surface Area Exposed to Surface Water ($cm^2$) | 13,350 | 13,350 |
| EF | Surface Water Dermal Exposure Frequency (days/year) | 105 | 105 |
| ED | Surface Water Dermal Exposure Duration (years) | 10 | 10 |
| EV | Events per Day (events/day) | 1 | 1 |
| BW | Body Weight (kg) | 44 | 44 |
| AT | Averaging Time (days) | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 3 |

$Intake_{derm}$(mg/kg·d) = IF x Absorbed Dose per Event ($DA_{event}$)

($DA_{event}$) presented in Table 4.6

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Calculation of Lifetime Average Daily Dose for Recreator - Trichloroethylene in Sediment**

$Intake_{ing} = [(CAF_o*(IF_{child}+IF_{adult}))+(MAF_o*(IF_{0-2}+IF_{2-6}+IF_{6-16}+IF_{16-26}))]$

| | | |
|---|---|---|
| Age-dependent adjustment factor for carcinogens - oral slope factor | $CAF_o$ | 0.804 |
| Age-dependent adjustment factor for mutagens - oral slope factor | $MAF_o$ | 0.202 |

$Intake_{derm} = [(CAF_o*(IF_{child}+IF_{adult})+MAF_o*(IF_{0-2}+IF_{2-6}+IF_{6-16}+IF_{16-26}))]$

**Table 7.6**
**Calculation of Chemical Cancer Risks for Swimmer**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.0E+03 | mg/kg | 9.8E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 2.3E+00 | mg/kg | 7.4E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 9.8E+00 | mg/kg | 1.9E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.9E-06 |
| | | | Ingestion | CHROMIUM | 1.6E+01 | mg/kg | 3.8E-05 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 1.9E-05 (a) |
| | | | Ingestion | COBALT | 6.2E+00 | mg/kg | 2.0E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.0E+02 | mg/kg | 3.3E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 2.7E+00 | mg/kg | 8.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 8.0E+03 | mg/kg | 2.6E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.7E+02 | mg/kg | 5.6E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 3.6E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 8.6E-01 | mg/kg | 2.8E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 6.5E-02 | mg/kg | 2.1E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 4.3E-08 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 4.7E-05 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.7E-06 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 3.5E-05 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.5E-05 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 7.1E-05 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 7.1E-06 (a) |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 1.5E-05 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 1.5E-07 (a) |
| | | | Ingestion | CHRYSENE | 3.0E+01 | mg/kg | 7.1E-05 | mg/kg-d | 1.0E-03 | (mg/kg-d)-1 | 7.1E-08 (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 3.6E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.6E-06 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 9.7E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 9.7E-07 (a) |
| | | | Ingestion | **TICs** | | | | | | | |
| | | | Ingestion | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 3.9E-06 | mg/kg-d | 1.2E+00 | (mg/kg-d)-1 | 4.7E-06 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **7.9E-05** |
| Sediment | Sediment | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 2.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 9.8E+00 | mg/kg | 2.3E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 3.5E-07 |
| | | | Dermal | CHROMIUM | 1.6E+01 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 6.2E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.0E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 2.7E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 8.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.7E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 8.6E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 6.5E-02 | mg/kg | 7.1E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.4E-08 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 1.3E-05 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.3E-06 (a) |
| | | | Dermal | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 9.6E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 9.6E-06 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 1.9E-05 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.9E-06 (a) |
| | | | Dermal | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 4.1E-06 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 4.1E-08 (a) |
| | | | Dermal | CHRYSENE | 3.0E+01 | mg/kg | 1.9E-05 | mg/kg-d | 1.0E-03 | (mg/kg-d)-1 | 1.9E-08 (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 9.8E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 9.8E-07 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 2.7E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.7E-07 (a) |
| | | | Dermal | **TICs** | | | | | | | |
| | | | Dermal | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 1.2E-06 | mg/kg-d | 1.2E+00 | (mg/kg-d)-1 | 1.5E-06 |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **1.6E-05** |
| Surface Water | Surface Water | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ARSENIC | 7.8E-03 | mg/L | 4.2E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 6.3E-06 |
| | | | Ingestion | CHROMIUM | 2.6E-03 | mg/L | 1.0E-05 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 5.0E-06 (a) |
| | | | Ingestion | COBALT | 2.1E-03 | mg/L | 1.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 4.4E-03 | mg/L | 2.4E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 1.1E+01 | mg/L | 6.1E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 9.5E-01 | mg/L | 5.1E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 2.6E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.6E-08 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 2.0E-04 | mg/L | 7.9E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 7.9E-07 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 5.2E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 5.2E-08 (a) |
| | | | Ingestion | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 9.7E-07 | mg/kg-d | 1.4E-02 | (mg/kg-d)-1 | 1.4E-08 |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 2.7E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.7E-07 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 3.5E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.5E-08 (a) |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **1E-05** |
| Surface Water | Surface Water | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ARSENIC | 7.8E-03 | mg/L | 2.2E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 3.4E-07 |
| | | | Dermal | CHROMIUM | 2.6E-03 | mg/L | 4.3E-07 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 8.6E-06 (a) |
| | | | Dermal | COBALT | 2.1E-03 | mg/L | 2.4E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 4.4E-03 | mg/L | 1.3E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 1.1E+01 | mg/L | 3.3E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 9.5E-01 | mg/L | 2.7E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 1.5E-05 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.5E-06 (a) |
| | | | Dermal | BENZO(A)PYRENE | 2.0E-04 | mg/L | 6.7E-05 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 6.7E-05 (a) |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | SL | Dermal | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 2.6E-05 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.6E-06 (a) |
| | | | Dermal | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 3.2E-04 | mg/kg-d | 1.4E-02 | (mg/kg-d)-1 | 4.4E-06 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 2.2E-05 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.2E-05 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 3.6E-05 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.6E-06 (a) |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1E-04** |
| **Exposure Point Total (SL)** | | | | | | | | | | | **2E-04** |
| Sediment | Sediment | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.5E+04 | mg/kg | 4.8E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 7.3E+00 | mg/kg | 2.4E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 2.8E+02 | mg/kg | 5.6E-05 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 8.4E-05 |
| | | | Ingestion | CADMIUM | 1.3E+01 | mg/kg | 4.4E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 1.6E+02 | mg/kg | 3.7E-04 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 1.9E-04 (a) |
| | | | Ingestion | COBALT | 1.7E+01 | mg/kg | 5.5E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 1.8E+02 | mg/kg | 5.8E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 1.5E+01 | mg/kg | 5.0E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 4.2E+04 | mg/kg | 1.4E-02 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.5E+03 | mg/kg | 4.9E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 3.6E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 5.6E+01 | mg/kg | 1.8E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ZINC | 1.1E+03 | mg/kg | 3.7E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 8.0E-02 | mg/kg | 2.6E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 5.3E-08 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 3.2E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.2E-07 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 3.3E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.3E-06 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 4.8E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.8E-07 (a) |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 4.7E-06 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 4.7E-08 (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 6.8E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 6.8E-07 (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 1.8E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.8E-07 (a) |
| | | | Ingestion | NAPHTHALENE | 2.8E+00 | mg/kg | 9.4E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **VOCs** | | | | | | | |
| | | | Ingestion | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | 5.0E-08 | mg/kg-d | 4.6E-02 | (mg/kg-d)-1 | 2.3E-09 (a) |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **2.8E-04** |
| Sediment | Sediment | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.5E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 7.3E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 2.8E+02 | mg/kg | 6.6E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.0E-05 |
| | | | Dermal | CADMIUM | 1.3E+01 | mg/kg | 1.0E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Dermal | CHROMIUM | 1.6E+02 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA |
| | | | Dermal | COBALT | 1.7E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | COPPER | 1.8E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 1.5E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 4.2E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 1.5E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 5.6E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ZINC | 1.1E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 8.0E-02 | mg/kg | 8.7E-09 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.7E-08 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 8.8E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 8.8E-08 (a) |
| | | | Dermal | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 9.0E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 9.0E-07 (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 1.3E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 1.3E-07 (a) |
| | | | Dermal | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 1.3E-06 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 1.3E-08 (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 1.9E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.9E-07 (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 4.9E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 4.9E-08 (a) |
| | | | Dermal | NAPHTHALENE | 2.8E+00 | mg/kg | 2.9E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **VOCs** | | | | | | | |
| | | | Dermal | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | NA | mg/kg-d | 4.6E-02 | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **1.1E-05** |
| Surface Water | Surface Water | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.3E+00 | mg/L | 6.9E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 1.2E-03 | mg/L | 6.2E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 3.1E-02 | mg/L | 1.7E-05 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.5E-05 |
| | | | Ingestion | CADMIUM | 6.2E-04 | mg/L | 3.4E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 4.5E-03 | mg/L | 1.8E-05 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 8.8E-06 (a) |
| | | | Ingestion | COBALT | 1.0E-03 | mg/L | 5.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 2.0E-03 | mg/L | 1.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 6.5E+00 | mg/L | 3.5E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 2.6E-02 | mg/L | 1.4E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 7.0E-02 | mg/L | 3.8E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 1.2E-03 | mg/L | 6.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 2.5E-03 | mg/L | 1.3E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 3.4E-05 | mg/L | 1.3E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.3E-07 (a) |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **3E-05** |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.3E+00 | mg/L | 3.7E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 1.2E-03 | mg/L | 3.3E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 3.1E-02 | mg/L | 8.8E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.3E-06 |
| | | | Dermal | CADMIUM | 6.2E-04 | mg/L | 1.8E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CHROMIUM | 4.5E-03 | mg/L | 7.5E-07 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 1.5E-05 (a) |
| | | | Dermal | COBALT | 1.0E-03 | mg/L | 1.2E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 2.0E-03 | mg/L | 5.7E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 6.5E+00 | mg/L | 1.9E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.6E-02 | mg/L | 7.3E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 7.0E-02 | mg/L | 2.0E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 1.2E-03 | mg/L | 3.6E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | VANADIUM | 2.5E-03 | mg/L | 7.1E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 3.4E-05 | mg/L | 1.1E-05 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.1E-05 (a) |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **3E-05** |
| **Exposure Point Total (BWL)** | | | | | | | | | | | **3E-04** |
| Sediment | Sediment | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.6E+04 | mg/kg | 5.3E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ANTIMONY | 2.0E+00 | mg/kg | 6.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | ARSENIC | 8.8E+01 | mg/kg | 1.7E-05 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 2.6E-05 |
| | | | Ingestion | CADMIUM | 7.7E+00 | mg/kg | 2.5E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CHROMIUM | 1.7E+02 | mg/kg | 4.1E-04 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 2.1E-04 (a) |
| | | | Ingestion | COBALT | 8.6E+00 | mg/kg | 2.8E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | COPPER | 2.1E+02 | mg/kg | 6.9E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | CYANIDE | 4.1E+00 | mg/kg | 1.3E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | IRON | 2.7E+04 | mg/kg | 8.7E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | LEAD | 1.0E+03 | mg/kg | 3.3E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | MANGANESE | 1.4E+02 | mg/kg | 4.7E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | NICKEL | 3.7E+01 | mg/kg | 1.2E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | THALLIUM | 4.7E-01 | mg/kg | 1.5E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | VANADIUM | 2.6E+01 | mg/kg | 8.6E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.6E-01 | mg/kg | 5.4E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.1E-07 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 2.7E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.7E-07 (a) |
| | | | Ingestion | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 2.6E-06 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 2.6E-06 (a) |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 3.3E-06 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 3.3E-07 (a) |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | | |
| | | | | | | | Value | Units | Value | Units | | |
| Sediment | Sediment | KWL | Ingestion | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 2.9E-06 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 2.9E-08 | (a) |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 3.9E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 3.9E-07 | (a) |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 9.9E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 9.9E-08 | (a) |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **2.4E-04** | |
| Sediment | Sediment | KWL | Dermal | **Metals** | | | | | | | | |
| | | | Dermal | ALUMINUM | 1.6E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | ANTIMONY | 2.0E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | ARSENIC | 8.8E+01 | mg/kg | 2.1E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 3.1E-06 | |
| | | | Dermal | CADMIUM | 7.7E+00 | mg/kg | 6.0E-09 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | CHROMIUM | 1.7E+02 | mg/kg | NA | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | NA | |
| | | | Dermal | COBALT | 8.6E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | COPPER | 2.1E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | CYANIDE | 4.1E+00 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | IRON | 2.7E+04 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | LEAD | 1.0E+03 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | MANGANESE | 1.4E+02 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | NICKEL | 3.7E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | THALLIUM | 4.7E-01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | VANADIUM | 2.6E+01 | mg/kg | NA | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Dermal | **PEST/PCB** | | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.6E-01 | mg/kg | 1.8E-08 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 3.6E-08 | |
| | | | Dermal | **SVOCs** | | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 7.5E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 7.5E-08 | (a) |
| | | | Dermal | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 7.0E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 7.0E-07 | (a) |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 9.1E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 9.1E-08 | (a) |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 7.9E-07 | mg/kg-d | 1.0E-02 | (mg/kg-d)-1 | 7.9E-09 | (a) |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 1.1E-07 | mg/kg-d | 1.0E+00 | (mg/kg-d)-1 | 1.1E-07 | (a) |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 2.7E-07 | mg/kg-d | 1.0E-01 | (mg/kg-d)-1 | 2.7E-08 | (a) |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **4.1E-06** | |
| Surface Water | Surface Water | KWL | Ingestion | **Metals** | | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.4E+00 | mg/L | 7.4E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Ingestion | ANTIMONY | 3.7E-03 | mg/L | 2.0E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Ingestion | ARSENIC | 1.7E-02 | mg/L | 9.0E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.4E-05 | |
| | | | Ingestion | CHROMIUM | 5.3E-03 | mg/L | 2.1E-05 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 1.0E-05 | (a) |
| | | | Ingestion | COBALT | 1.6E-03 | mg/L | 8.6E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Ingestion | CYANIDE | 1.8E-03 | mg/L | 9.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Ingestion | IRON | 3.6E+00 | mg/L | 1.9E-03 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Ingestion | LEAD | 2.9E-02 | mg/L | 1.6E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Ingestion | MANGANESE | 8.0E-02 | mg/L | 4.3E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | Ingestion | THALLIUM | 5.8E-03 | mg/L | 3.1E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA | |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **2E-05** | |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.4E+00 | mg/L | 3.9E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ANTIMONY | 3.7E-03 | mg/L | 1.1E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | ARSENIC | 1.7E-02 | mg/L | 4.8E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 7.2E-07 |
| | | | Dermal | CHROMIUM | 5.3E-03 | mg/L | 9.0E-07 | mg/kg-d | 2.0E+01 | (mg/kg-d)-1 | 1.8E-05 (a) |
| | | | Dermal | COBALT | 1.6E-03 | mg/L | 1.8E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | CYANIDE | 1.8E-03 | mg/L | 5.1E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | IRON | 3.6E+00 | mg/L | 1.0E-04 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | LEAD | 2.9E-02 | mg/L | 8.4E-08 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | MANGANESE | 8.0E-02 | mg/L | 2.3E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Dermal | THALLIUM | 5.8E-03 | mg/L | 1.7E-07 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **2E-05** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **3E-04** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

(a) The mutagen risks were calculated for COPCs identified as having a mutagenic mode of action.

**Ingestion - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{\text{IR x FS x EF x ED x CF x ADAF}}{\text{BW x AT}} =$$

| | | Non-mutagens | Mutagens[a] | |
|---|---|---|---|---|
| | | 3.3E-07 | 1.8E-06 | 5.7E-07 |
| | | (Child) | (0-2 years) | (2-6 years) |
| IR | Ingestion Rate (mg/day) | 200 | 200 | 200 |
| FS | Fraction from Contaminated Source | 1 | 1 | 1 |
| EF | Sediment Ingestion Exposure Frequency (days/year) | 105 | 105 | 105 |
| ED | Sediment Ingestion Exposure Duration (years) | 6 | 2 | 4 |
| CF | Conversion Factor (kg/mg) | 0.000001 | 0.000001 | 0.000001 |
| BW | Body Weight (kg) | 15 | 9 | 17 |
| AT | Averaging Time (days) | 25,550 | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 10 | 3 |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{sediment} * IF * B$

(B) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC Value | EPC Units | Cancer Risk Calculations: Intake/Exposure Value | Intake/Exposure Units | CSF/Unit Risk Value | CSF/Unit Risk Units | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|

**Dermal - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{SA \times AF \times EF \times ED \times CF \times ADAF}{BW \times AT} =$$

| | | Non-mutagens | Mutagens[a] | |
|---|---|---|---|---|
| | | 7.8E-07 | 3.6E-06 | 1.5E-06 |
| | | (Child) | (0-2 years) | (2-6 years) |
| SA | Surface Area Exposed to Sediment ($cm^2$/day) | 2,373 | 1,954 | 2,591 |
| AF | Sediment Skin Adherence Factor ($mg/cm^2$) | 0.2 | 0.2 | 0.2 |
| EF | Sediment Dermal Exposure Frequency (days/year) | 105 | 105 | 105 |
| ED | Sediment Dermal Exposure Duration (years) | 6 | 2 | 4 |
| CF | Conversion Factor (kg/mg) | 0.000001 | 0.000001 | 0.000001 |
| BW | Body Weight (kg) | 15 | 9 | 17 |
| AT | Averaging Time (days) | 25,550 | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 10 | 3 |

$Intake_{derm}(mg/kg{\cdot}d) = EPC_{sediment} * IF * ABS$

(ABS) presented in Table 5.1

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Ingestion - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{IR \times FR \times ET \times EF \times ED \times ADAF}{BW \times AT} =$$

| | | Non-mutagens | Mutagens[a] | |
|---|---|---|---|---|
| | | 5.4E-04 | 3.00E-03 | 9.31E-04 |
| | | (Child) | (0-2 years) | (2-6 years) |
| IR | Ingestion Rate - Surface water (L/hour) | 0.12 | 0.12 | 0.12 |
| FS | Fraction from Contaminated Source | 1 | 1 | 1 |
| ET | Surface Water Exposure Time (hours/day) | 2.7 | 2.7 | 2.7 |
| EF | Surface Water Ingestion Exposure Frequency (days/year) | 105 | 105 | 105 |
| ED | Surface Water Exposure Duration (years) | 6 | 2 | 4 |
| BW | Body Weight (kg) | 15 | 9 | 17 |
| AT | Averaging Time (days) | 25,550 | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 10 | 3 |

$Intake_{ing}(mg/kg\text{-}d) = EPC_{sw} \times IF$

Cancer Risk = Intake x Cancer Slope Factor (CSF)

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |

**Dermal - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{\text{SA x EV x EF x ED x ADAF}}{\text{BW x AT}} =$$

| | | Non-mutagens | Mutagens[a] | |
|---|---|---|---|---|
| | | 1.0E+01 | 4.1E+01 | 2.0E+01 |
| | | (Child) | (0-2 years) | (2-6 years) |
| SA | Surface Area Exposed to Surface Water ($cm^2$) | 6,365 | 4,463 | 7,225 |
| EF | Surface Water Dermal Exposure Frequency (days/year) | 105 | 105 | 105 |
| ED | Surface Water Dermal Exposure Duration (years) | 6 | 2 | 4 |
| EV | Events per Day (events/day) | 1 | 1 | 1 |
| BW | Body Weight (kg) | 15 | 9 | 17 |
| AT | Averaging Time (days) | 25,550 | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 10 | 3 |

$Intake_{derm}$(mg/kg·d) = IF x Absorbed Dose per Event ($DA_{event}$)

($DA_{event}$) presented in Table 4.6

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Calculation of Lifetime Average Daily Dose for Recreator - Trichloroethylene in Sediment**

$Intake_{ing} = [(CAF_o*(IF_{child}+IF_{adult}))+(MAF_o*(IF_{0-2}+IF_{2-6}+IF_{6-16}+IF_{16-26}))]$

| | | |
|---|---|---|
| Age-dependent adjustment factor for carcinogens - oral slope factor | $CAF_o$ | 0.804 |
| Age-dependent adjustment factor for mutagens - oral slope factor | $MAF_o$ | 0.202 |

$Intake_{derm} = [(CAF_o*(IF_{child}+IF_{adult})+MAF_o*(IF_{0-2}+IF_{2-6}+IF_{6-16}+IF_{16-26}))]$

**Table 7.7**
**Calculation of Chemical Cancer Risks for Angler**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Angler |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | | | Value | Units | Value | Units | |
| Fish | Tissue | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ARSENIC | 1.0E-02 | mg/kg | 1.2E-06 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 1.8E-06 |
| | | | Ingestion | CHROMIUM | 4.3E+00 | mg/kg | 5.2E-04 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 2.6E-04 |
| | | | Ingestion | LEAD | 1.1E-01 | mg/kg | 1.3E-05 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | 4,4'-DDD | 1.2E-02 | mg/kg | 1.4E-06 | mg/kg-d | 2.4E-01 | (mg/kg-d)-1 | 3.4E-07 |
| | | | Ingestion | 4,4'-DDE | 1.5E-02 | mg/kg | 1.8E-06 | mg/kg-d | 3.4E-01 | (mg/kg-d)-1 | 6.3E-07 |
| | | | Ingestion | AROCLOR-1254 | 5.4E-02 | mg/kg | 6.5E-06 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 1.3E-05 |
| | | | Ingestion | AROCLOR-1260 | 2.2E-02 | mg/kg | 2.7E-06 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 5.4E-06 |
| | | | **Exposure Route Total [Fish-Ingestion]** | | | | | | | | **3E-04** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **3E-04** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

**Ingestion - Fish**

$$\text{Intake Factor (IF)} = \frac{\text{IR} \times \text{EF} \times \text{ED}}{\text{BW} \times \text{AT}} = 1.2\text{E-}04 \text{ (Adult)}$$

| | | |
|---|---|---|
| IR | Fish Ingestion Rate (kg/day) | 0.026 |
| EF | Fish Ingestion Exposure Frequency (days/year) | 365 |
| ED | Exposure Duration (years) | 26 |
| BW | Body Weight (kg) | 80 |
| AT | Averaging Time (days) | 25,550 |

$Intake_{ing}(mg/kg\text{-}d) = EPC_{fish} \times IF$

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Table 7.8**
**Calculation of Chemical Cancer Risks for Angler**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Angler |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC Value | EPC Units | Cancer Risk Calculations: Intake/Exposure Value | Intake/Exposure Units | CSF/Unit Risk Value | CSF/Unit Risk Units | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Fish | Tissue | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ARSENIC | 1.0E-02 | mg/kg | 5.6E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 8.4E-07 |
| | | | Ingestion | CHROMIUM | 4.3E+00 | mg/kg | 7.1E-04 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 3.5E-04 (a) |
| | | | Ingestion | LEAD | 1.1E-01 | mg/kg | 6.0E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | 4,4'-DDD | 1.2E-02 | mg/kg | 6.5E-07 | mg/kg-d | 2.4E-01 | (mg/kg-d)-1 | 1.6E-07 |
| | | | Ingestion | 4,4'-DDE | 1.5E-02 | mg/kg | 8.4E-07 | mg/kg-d | 3.4E-01 | (mg/kg-d)-1 | 2.9E-07 |
| | | | Ingestion | AROCLOR-1254 | 5.4E-02 | mg/kg | 2.9E-06 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 5.9E-06 |
| | | | Ingestion | AROCLOR-1260 | 2.2E-02 | mg/kg | 1.2E-06 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 2.4E-06 |
| | | | **Exposure Route Total [Fish-Ingestion]** | | | | | | | | **4E-04** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **4E-04** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

(a) The mutagen risks were calculated for COPCs identified as having a mutagenic mode of action.

**Ingestion - Fish**

$$\text{Intake Factor (IF)} = \frac{\text{IR x EF x ED x ADAF}}{\text{BW x AT}}$$

| | | Non-mutagens | Mutagens[a] |
|---|---|---|---|
| | = | 5.5E-05 (Adolescent) | 1.6E-04 (6-16 years) |
| IR | Fish Ingestion Rate (kg/day) | 0.017 | 0.017 |
| EF | Fish Ingestion Exposure Frequency (days/year) | 365 | 365 |
| ED | Exposure Duration (years) | 10 | 10 |
| BW | Body Weight (kg) | 44 | 44 |
| AT | Averaging Time (days) | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 3 |

$Intake_{ing}(mg/kg\text{-}d) = EPC_{fish} \times IF$

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Table 7.9**
**Calculation of Chemical Cancer Risks for Angler**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Angler |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Cancer Risk Calculations | | | | Cancer Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Intake/Exposure | | CSF/Unit Risk | | |
| | | | | | Value | Units | Value | Units | Value | Units | |
| Fish | Tissue | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ARSENIC | 1.0E-02 | mg/kg | 5.2E-07 | mg/kg-d | 1.5E+00 | (mg/kg-d)-1 | 7.9E-07 |
| | | | Ingestion | CHROMIUM | 4.3E+00 | mg/kg | 1.6E-03 | mg/kg-d | 5.0E-01 | (mg/kg-d)-1 | 8.1E-04 (a) |
| | | | Ingestion | LEAD | 1.1E-01 | mg/kg | 5.6E-06 | mg/kg-d | NA | (mg/kg-d)-1 | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | 4,4'-DDD | 1.2E-02 | mg/kg | 6.1E-07 | mg/kg-d | 2.4E-01 | (mg/kg-d)-1 | 1.5E-07 |
| | | | Ingestion | 4,4'-DDE | 1.5E-02 | mg/kg | 7.9E-07 | mg/kg-d | 3.4E-01 | (mg/kg-d)-1 | 2.7E-07 |
| | | | Ingestion | AROCLOR-1254 | 5.4E-02 | mg/kg | 2.8E-06 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 5.5E-06 |
| | | | Ingestion | AROCLOR-1260 | 2.2E-02 | mg/kg | 1.1E-06 | mg/kg-d | 2.0E+00 | (mg/kg-d)-1 | 2.3E-06 |
| | | | **Exposure Route Total [Fish-Ingestion]** | | | | | | | | **8E-04** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **8E-04** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

(a) The mutagen risks were calculated for COPCs identified as having a mutagenic mode of action.

**Ingestion - Fish**

$$\text{Intake Factor (IF)} = \frac{\text{IR x EF x ED x ADAF}}{\text{BW x AT}}$$

| | | Non-mutagens | Mutagens[a] | |
|---|---|---|---|---|
| = | | 5.1E-05 (Child) | 2.9E-04 (0-2 years) | 8.9E-05 (2-6 years) |
| IR | Fish Ingestion Rate (kg/day) | 0.009 | 0.009 | 0.009 |
| EF | Fish Ingestion Exposure Frequency (days/year) | 365 | 365 | 365 |
| ED | Exposure Duration (years) | 6 | 2 | 4 |
| BW | Body Weight (kg) | 15 | 9 | 17 |
| AT | Averaging Time (days) | 25,550 | 25,550 | 25,550 |
| ADAF | Age-dependent Adjustment Factor | -- | 10 | 3 |

$Intake_{ing}(mg/kg\text{-}d) = EPC_{fish} \times IF$

Cancer Risk = Intake x Cancer Slope Factor (CSF)

**Table 7.10**
**Calculation of Chemical Non-cancer Hazards for Recreator**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.0E+03 | mg/kg | 4.5E-04 | mg/kg-d | 1.0E+00 | mg/kg-d | 4.5E-04 |
| | | | Ingestion | ANTIMONY | 2.3E+00 | mg/kg | 3.4E-07 | mg/kg-d | 4.0E-04 | mg/kg-d | 8.5E-04 |
| | | | Ingestion | ARSENIC | 9.8E+00 | mg/kg | 8.9E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.0E-03 |
| | | | Ingestion | CHROMIUM | 1.6E+01 | mg/kg | 2.4E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 8.0E-04 |
| | | | Ingestion | COBALT | 6.2E+00 | mg/kg | 9.3E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.1E-03 |
| | | | Ingestion | COPPER | 1.0E+02 | mg/kg | 1.5E-05 | mg/kg-d | 4.0E-02 | mg/kg-d | 3.8E-04 |
| | | | Ingestion | CYANIDE | 2.7E+00 | mg/kg | 4.0E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 6.7E-04 |
| | | | Ingestion | IRON | 8.0E+03 | mg/kg | 1.2E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.7E-03 |
| | | | Ingestion | LEAD | 1.7E+02 | mg/kg | 2.6E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 1.6E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 6.9E-04 |
| | | | Ingestion | THALLIUM | 8.6E-01 | mg/kg | 1.3E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 1.3E-02 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 6.5E-02 | mg/kg | 9.8E-09 | mg/kg-d | 2.0E-05 | mg/kg-d | 4.9E-04 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 3.0E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 2.2E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.4E-03 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 4.4E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 9.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | CHRYSENE | 3.0E+01 | mg/kg | 4.5E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 2.3E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 6.1E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | **TICs** | | | | | | | |
| | | | Ingestion | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 1.8E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **3.2E-02** |
| Sediment | Sediment | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.0E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 2.3E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 9.8E+00 | mg/kg | 5.4E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.8E-03 |
| | | | Dermal | CHROMIUM | 1.6E+01 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 6.2E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.0E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 2.7E+00 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 8.0E+03 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.7E+02 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 8.6E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 6.5E-02 | mg/kg | 1.7E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 8.3E-04 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 4.7E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 3.5E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.2E-02 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 7.0E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 1.5E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | CHRYSENE | 3.0E+01 | mg/kg | 7.0E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 3.5E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 9.6E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | **TICs** | | | | | | | |
| | | | Dermal | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 2.8E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **1.4E-02** |
| Surface Water | Surface Water | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ARSENIC | 7.8E-03 | mg/L | 7.1E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.4E-04 |
| | | | Dermal | CHROMIUM | 2.6E-03 | mg/L | 2.3E-08 | mg/kg-d | 7.5E-05 | mg/kg-d | 3.1E-04 |
| | | | Dermal | COBALT | 2.1E-03 | mg/L | 7.7E-09 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.6E-05 |
| | | | Dermal | CYANIDE | 4.4E-03 | mg/L | 4.0E-08 | mg/kg-d | 6.0E-04 | mg/kg-d | 6.7E-05 |
| | | | Dermal | IRON | 1.1E+01 | mg/L | 1.0E-04 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.5E-04 |
| | | | Dermal | MANGANESE | 9.5E-01 | mg/L | 8.6E-06 | mg/kg-d | 9.6E-04 | mg/kg-d | 9.0E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 1.3E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 2.0E-04 | mg/L | 6.0E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.0E-02 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 2.3E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 1.7E-04 | mg/kg-d | 2.0E-02 | mg/kg-d | 8.3E-03 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 1.9E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 3.2E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **3.8E-02** |
| **Exposure Point Total (SL)** | | | | | | | | | | | **8E-02** |
| Soil | Soil (0-2 ft bgs) | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.8E+03 | mg/kg | 2.0E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 2.0E-03 |
| | | | Ingestion | ANTIMONY | 1.4E+00 | mg/kg | 7.3E-07 | mg/kg-d | 4.0E-04 | mg/kg-d | 1.8E-03 |
| | | | Ingestion | ARSENIC | 1.1E+02 | mg/kg | 3.5E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.2E-01 |
| | | | Ingestion | CADMIUM | 2.3E+00 | mg/kg | 1.2E-06 | mg/kg-d | 1.0E-03 | mg/kg-d | 1.2E-03 |
| | | | Ingestion | CHROMIUM | 4.0E+01 | mg/kg | 2.1E-05 | mg/kg-d | 3.0E-03 | mg/kg-d | 6.9E-03 |
| | | | Ingestion | COBALT | 1.1E+00 | mg/kg | 5.6E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.9E-03 |
| | | | Ingestion | CYANIDE | 6.0E-01 | mg/kg | 3.1E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 5.1E-04 |
| | | | Ingestion | IRON | 6.3E+03 | mg/kg | 3.2E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 4.6E-03 |
| | | | Ingestion | LEAD | 1.9E+02 | mg/kg | 9.6E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | THALLIUM | 8.5E-01 | mg/kg | 4.4E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 4.4E-02 |
| | | | Ingestion | VANADIUM | 1.2E+01 | mg/kg | 6.4E-06 | mg/kg-d | 5.0E-03 | mg/kg-d | 1.3E-03 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | BWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E-01 | mg/kg | 6.9E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.3E-04 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **1.8E-01** |
| Soil | Soil (0-2 ft bgs) | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.8E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 1.4E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 1.1E+02 | mg/kg | 7.5E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.5E-02 |
| | | | Dermal | CADMIUM | 2.3E+00 | mg/kg | 5.0E-09 | mg/kg-d | 2.5E-05 | mg/kg-d | 2.0E-04 |
| | | | Dermal | CHROMIUM | 4.0E+01 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 1.1E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 6.0E-01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 6.3E+03 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.9E+02 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 8.5E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 1.2E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 1.4E-01 | mg/kg | 3.8E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.3E-04 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **2.5E-02** |
| Soil | Particulates in Air | BWL | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 1.2E-06 | mg/m3 | 1.6E-07 | mg/m3 | 5.0E-03 | mg/m3 | 3.2E-05 |
| | | | Inhalation | ANTIMONY | 4.4E-10 | mg/m3 | 6.0E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | ARSENIC | 3.6E-08 | mg/m3 | 4.9E-09 | mg/m3 | 1.5E-05 | mg/m3 | 3.2E-04 |
| | | | Inhalation | CADMIUM | 7.1E-10 | mg/m3 | 9.7E-11 | mg/m3 | 1.0E-05 | mg/m3 | 9.7E-06 |
| | | | Inhalation | CHROMIUM | 1.2E-08 | mg/m3 | 1.7E-09 | mg/m3 | 1.0E-04 | mg/m3 | 1.7E-05 |
| | | | Inhalation | COBALT | 3.4E-10 | mg/m3 | 4.6E-11 | mg/m3 | 6.0E-06 | mg/m3 | 7.7E-06 |
| | | | Inhalation | CYANIDE | 7.9E-06 | mg/m3 | 1.1E-06 | mg/m3 | 8.0E-04 | mg/m3 | 1.4E-03 |
| | | | Inhalation | IRON | 1.9E-06 | mg/m3 | 2.7E-07 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | LEAD | 5.8E-08 | mg/m3 | 7.9E-09 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | THALLIUM | 2.6E-10 | mg/m3 | 3.6E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | VANADIUM | 3.9E-09 | mg/m3 | 5.3E-10 | mg/m3 | 1.0E-04 | mg/m3 | 5.3E-06 |
| | | | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)PYRENE | 4.2E-11 | mg/m3 | 5.7E-12 | mg/m3 | 2.0E-06 | mg/m3 | 2.9E-06 |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **1.8E-03** |
| Sediment | Sediment | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.5E+04 | mg/kg | 2.2E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 2.2E-03 |
| | | | Ingestion | ANTIMONY | 7.3E+00 | mg/kg | 1.1E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 2.7E-03 |
| | | | Ingestion | ARSENIC | 2.8E+02 | mg/kg | 2.6E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 8.5E-02 |
| | | | Ingestion | CADMIUM | 1.3E+01 | mg/kg | 2.0E-06 | mg/kg-d | 1.0E-03 | mg/kg-d | 2.0E-03 |
| | | | Ingestion | CHROMIUM | 1.6E+02 | mg/kg | 2.3E-05 | mg/kg-d | 3.0E-03 | mg/kg-d | 7.8E-03 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Ingestion | COBALT | 1.7E+01 | mg/kg | 2.5E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 8.4E-03 |
| | | | Ingestion | COPPER | 1.8E+02 | mg/kg | 2.7E-05 | mg/kg-d | 4.0E-02 | mg/kg-d | 6.6E-04 |
| | | | Ingestion | CYANIDE | 1.5E+01 | mg/kg | 2.3E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 3.8E-03 |
| | | | Ingestion | IRON | 4.2E+04 | mg/kg | 6.4E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 9.1E-03 |
| | | | Ingestion | LEAD | 1.5E+03 | mg/kg | 2.2E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 1.7E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 6.9E-04 |
| | | | Ingestion | VANADIUM | 5.6E+01 | mg/kg | 8.4E-06 | mg/kg-d | 5.0E-03 | mg/kg-d | 1.7E-03 |
| | | | Ingestion | ZINC | 1.1E+03 | mg/kg | 1.7E-04 | mg/kg-d | 3.0E-01 | mg/kg-d | 5.6E-04 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 8.0E-02 | mg/kg | 1.2E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 6.0E-04 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 2.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 2.1E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 6.9E-04 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 3.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 3.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 4.3E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 1.1E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | NAPHTHALENE | 2.8E+00 | mg/kg | 4.3E-07 | mg/kg-d | 2.0E-02 | mg/kg-d | 2.1E-05 |
| | | | Ingestion | **VOCs** | | | | | | | |
| | | | Ingestion | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | 1.0E-08 | mg/kg-d | 5.0E-04 | mg/kg-d | 2.0E-05 |
| | | | Ingestion | **TICs** | | | | | | | |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **1.3E-01** |
| Sediment | Sediment | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.5E+04 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 7.3E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 2.8E+02 | mg/kg | 1.5E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.2E-02 |
| | | | Dermal | CADMIUM | 1.3E+01 | mg/kg | 2.4E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 9.7E-04 |
| | | | Dermal | CHROMIUM | 1.6E+02 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 1.7E+01 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.8E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 1.5E+01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 4.2E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.5E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 5.6E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | ZINC | 1.1E+03 | mg/kg | NA | mg/kg-d | 3.0E-01 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 8.0E-02 | mg/kg | 2.0E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.0E-03 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 3.2E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 3.2E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.1E-03 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 4.8E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 4.6E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 6.7E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 1.8E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | NAPHTHALENE | 2.8E+00 | mg/kg | 6.7E-07 | mg/kg-d | 2.0E-02 | mg/kg-d | 3.4E-05 |
| | | | Dermal | **VOCs** | | | | | | | |
| | | | Dermal | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | NA | mg/kg-d | 5.0E-04 | mg/kg-d | NA |
| | | | Dermal | **TICs** | | | | | | | |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **5.5E-02** |
| Surface Water | Surface Water | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.3E+00 | mg/L | 1.2E-05 | mg/kg-d | 1.0E+00 | mg/kg-d | 1.2E-05 |
| | | | Dermal | ANTIMONY | 1.2E-03 | mg/L | 1.0E-08 | mg/kg-d | 6.0E-05 | mg/kg-d | 1.7E-04 |
| | | | Dermal | ARSENIC | 3.1E-02 | mg/L | 2.8E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 9.3E-04 |
| | | | Dermal | CADMIUM | 6.2E-04 | mg/L | 5.7E-09 | mg/kg-d | 2.5E-05 | mg/kg-d | 2.3E-04 |
| | | | Dermal | CHROMIUM | 4.5E-03 | mg/L | 4.1E-08 | mg/kg-d | 7.5E-05 | mg/kg-d | 5.4E-04 |
| | | | Dermal | COBALT | 1.0E-03 | mg/L | 3.7E-09 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.2E-05 |
| | | | Dermal | CYANIDE | 2.0E-03 | mg/L | 1.8E-08 | mg/kg-d | 6.0E-04 | mg/kg-d | 3.0E-05 |
| | | | Dermal | IRON | 6.5E+00 | mg/L | 5.9E-05 | mg/kg-d | 7.0E-01 | mg/kg-d | 8.4E-05 |
| | | | Dermal | LEAD | 2.6E-02 | mg/L | 2.3E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 7.0E-02 | mg/L | 6.4E-07 | mg/kg-d | 9.6E-04 | mg/kg-d | 6.6E-04 |
| | | | Dermal | THALLIUM | 1.2E-03 | mg/L | 1.1E-08 | mg/kg-d | 1.0E-05 | mg/kg-d | 1.1E-03 |
| | | | Dermal | VANADIUM | 2.5E-03 | mg/L | 2.2E-08 | mg/kg-d | 1.3E-04 | mg/kg-d | 1.7E-04 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 3.4E-05 | mg/L | 1.0E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.4E-03 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **7.4E-03** |
| **Exposure Point Total (BWL)** | | | | | | | | | | | **4E-01** |
| Soil | Soil (0-2 ft bgs) | HC | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 9.2E+03 | mg/kg | 4.7E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 4.7E-03 |
| | | | Ingestion | ANTIMONY | 5.3E+00 | mg/kg | 2.7E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 6.8E-03 |
| | | | Ingestion | ARSENIC | 5.0E+02 | mg/kg | 1.5E-04 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.1E-01 |
| | | | Ingestion | BARIUM | 1.9E+03 | mg/kg | 1.0E-03 | mg/kg-d | 2.0E-01 | mg/kg-d | 5.0E-03 |
| | | | Ingestion | CADMIUM | 2.9E+00 | mg/kg | 1.5E-06 | mg/kg-d | 1.0E-03 | mg/kg-d | 1.5E-03 |
| | | | Ingestion | CHROMIUM | 6.4E+02 | mg/kg | 3.3E-04 | mg/kg-d | 3.0E-03 | mg/kg-d | 1.1E-01 |
| | | | Ingestion | COBALT | 6.3E+00 | mg/kg | 3.2E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.1E-02 |
| | | | Ingestion | COPPER | 1.4E+02 | mg/kg | 7.3E-05 | mg/kg-d | 4.0E-02 | mg/kg-d | 1.8E-03 |
| | | | Ingestion | CYANIDE | 4.9E+01 | mg/kg | 2.5E-05 | mg/kg-d | 6.0E-04 | mg/kg-d | 4.2E-02 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | HC | Ingestion | IRON | 2.8E+04 | mg/kg | 1.4E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 2.0E-02 |
| | | | Ingestion | LEAD | 3.3E+03 | mg/kg | 1.7E-03 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 3.4E+02 | mg/kg | 1.7E-04 | mg/kg-d | 2.4E-02 | mg/kg-d | 7.2E-03 |
| | | | Ingestion | MERCURY | 7.7E-01 | mg/kg | 4.0E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.3E-03 |
| | | | Ingestion | NICKEL | 1.4E+01 | mg/kg | 7.0E-06 | mg/kg-d | 2.0E-02 | mg/kg-d | 3.5E-04 |
| | | | Ingestion | THALLIUM | 6.6E-01 | mg/kg | 3.4E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 3.4E-02 |
| | | | Ingestion | VANADIUM | 3.0E+01 | mg/kg | 1.6E-05 | mg/kg-d | 5.0E-03 | mg/kg-d | 3.1E-03 |
| | | | Ingestion | ZINC | 5.3E+02 | mg/kg | 2.7E-04 | mg/kg-d | 3.0E-01 | mg/kg-d | 9.1E-04 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 5.5E-02 | mg/kg | 2.8E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.4E-03 |
| | | | Ingestion | AROCLOR-1260 | 1.7E-01 | mg/kg | 8.5E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 4.2E-03 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.6E+00 | mg/kg | 8.2E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.8E+00 | mg/kg | 9.0E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.0E-03 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 1.0E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.8E+00 | mg/kg | 9.5E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 3.0E-01 | mg/kg | 1.5E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.7E-01 | mg/kg | 4.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | NAPHTHALENE | 2.7E-01 | mg/kg | 1.4E-07 | mg/kg-d | 2.0E-02 | mg/kg-d | 6.8E-06 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **7.7E-01** |
| Soil | Soil (0-2 ft bgs) | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 9.2E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 5.3E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 5.0E+02 | mg/kg | 3.2E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.1E-01 |
| | | | Dermal | BARIUM | 1.9E+03 | mg/kg | NA | mg/kg-d | 1.4E-02 | mg/kg-d | NA |
| | | | Dermal | CADMIUM | 2.9E+00 | mg/kg | 6.3E-09 | mg/kg-d | 2.5E-05 | mg/kg-d | 2.5E-04 |
| | | | Dermal | CHROMIUM | 6.4E+02 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 6.3E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.4E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 4.9E+01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 2.8E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 3.3E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 3.4E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | MERCURY | 7.7E-01 | mg/kg | NA | mg/kg-d | 2.1E-05 | mg/kg-d | NA |
| | | | Dermal | NICKEL | 1.4E+01 | mg/kg | NA | mg/kg-d | 8.0E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 6.6E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 3.0E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | ZINC | 5.3E+02 | mg/kg | NA | mg/kg-d | 3.0E-01 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 5.5E-02 | mg/kg | 1.7E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 8.3E-04 |
| | | | Dermal | AROCLOR-1260 | 1.7E-01 | mg/kg | 5.0E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 2.5E-03 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | HC | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.6E+00 | mg/kg | 4.5E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.8E+00 | mg/kg | 4.9E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.6E-03 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 5.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.8E+00 | mg/kg | 5.2E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 3.0E-01 | mg/kg | 8.3E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.7E-01 | mg/kg | 2.2E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | NAPHTHALENE | 2.7E-01 | mg/kg | 7.5E-08 | mg/kg-d | 2.0E-02 | mg/kg-d | 3.8E-06 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **1.1E-01** |
| Soil | Particulates in Air | HC | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 2.8E-06 | mg/m3 | 3.9E-07 | mg/m3 | 5.0E-03 | mg/m3 | 7.8E-05 |
| | | | Inhalation | ANTIMONY | 1.6E-09 | mg/m3 | 2.3E-10 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | ARSENIC | 1.5E-07 | mg/m3 | 2.1E-08 | mg/m3 | 1.5E-05 | mg/m3 | 1.4E-03 |
| | | | Inhalation | BARIUM | 6.0E-07 | mg/m3 | 8.2E-08 | mg/m3 | 5.0E-04 | mg/m3 | 1.6E-04 |
| | | | Inhalation | CADMIUM | 9.0E-10 | mg/m3 | 1.2E-10 | mg/m3 | 1.0E-05 | mg/m3 | 1.2E-05 |
| | | | Inhalation | CHROMIUM | 2.0E-07 | mg/m3 | 2.7E-08 | mg/m3 | 1.0E-04 | mg/m3 | 2.7E-04 |
| | | | Inhalation | COBALT | 1.9E-09 | mg/m3 | 2.7E-10 | mg/m3 | 6.0E-06 | mg/m3 | 4.4E-05 |
| | | | Inhalation | COPPER | 4.4E-08 | mg/m3 | 6.0E-09 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | CYANIDE | 6.5E-04 | mg/m3 | 8.9E-05 | mg/m3 | 8.0E-04 | mg/m3 | 1.1E-01 |
| | | | Inhalation | IRON | 8.5E-06 | mg/m3 | 1.2E-06 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | LEAD | 1.0E-06 | mg/m3 | 1.4E-07 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | MANGANESE | 1.0E-07 | mg/m3 | 1.4E-08 | mg/m3 | 5.0E-05 | mg/m3 | 2.9E-04 |
| | | | Inhalation | MERCURY | 2.4E-10 | mg/m3 | 3.3E-11 | mg/m3 | 3.0E-04 | mg/m3 | 1.1E-07 |
| | | | Inhalation | NICKEL | 4.2E-09 | mg/m3 | 5.8E-10 | mg/m3 | 9.0E-05 | mg/m3 | 6.4E-06 |
| | | | Inhalation | THALLIUM | 2.0E-10 | mg/m3 | 2.8E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | VANADIUM | 9.4E-09 | mg/m3 | 1.3E-09 | mg/m3 | 1.0E-04 | mg/m3 | 1.3E-05 |
| | | | Inhalation | ZINC | 1.6E-07 | mg/m3 | 2.3E-08 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | **PEST/PCB** | | | | | | | |
| | | | Inhalation | AROCLOR-1254 | 5.1E-08 | mg/m3 | 7.0E-09 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | AROCLOR-1260 | 9.8E-08 | mg/m3 | 1.3E-08 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)ANTHRACENE | 2.8E-07 | mg/m3 | 3.9E-08 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | BENZO(A)PYRENE | 5.4E-10 | mg/m3 | 7.4E-11 | mg/m3 | 2.0E-06 | mg/m3 | 3.7E-05 |
| | | | Inhalation | BENZO(B)FLUORANTHENE | 6.2E-10 | mg/m3 | 8.5E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | BENZO(K)FLUORANTHENE | 5.7E-10 | mg/m3 | 7.8E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | DIBENZO(A,H)ANTHRACENE | 9.2E-11 | mg/m3 | 1.3E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | INDENO(1,2,3-CD)PYRENE | 2.4E-10 | mg/m3 | 3.3E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | NAPHTHALENE | 4.5E-06 | mg/m3 | 6.1E-07 | mg/m3 | 3.0E-03 | mg/m3 | 2.0E-04 |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **1.1E-01** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | HC | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 8.3E+03 | mg/kg | 1.3E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 1.3E-03 |
| | | | Ingestion | ANTIMONY | 2.5E+00 | mg/kg | 3.7E-07 | mg/kg-d | 4.0E-04 | mg/kg-d | 9.2E-04 |
| | | | Ingestion | ARSENIC | 3.9E+02 | mg/kg | 3.5E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.2E-01 |
| | | | Ingestion | BARIUM | 1.0E+03 | mg/kg | 1.5E-04 | mg/kg-d | 2.0E-01 | mg/kg-d | 7.6E-04 |
| | | | Ingestion | CADMIUM | 4.5E+00 | mg/kg | 6.8E-07 | mg/kg-d | 1.0E-03 | mg/kg-d | 6.8E-04 |
| | | | Ingestion | CHROMIUM | 4.4E+02 | mg/kg | 6.6E-05 | mg/kg-d | 3.0E-03 | mg/kg-d | 2.2E-02 |
| | | | Ingestion | COBALT | 5.0E+00 | mg/kg | 7.5E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.5E-03 |
| | | | Ingestion | COPPER | 1.7E+02 | mg/kg | 2.6E-05 | mg/kg-d | 4.0E-02 | mg/kg-d | 6.4E-04 |
| | | | Ingestion | CYANIDE | 4.8E+01 | mg/kg | 7.2E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.2E-02 |
| | | | Ingestion | IRON | 1.7E+04 | mg/kg | 2.6E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 3.7E-03 |
| | | | Ingestion | LEAD | 2.9E+03 | mg/kg | 4.3E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 8.1E+01 | mg/kg | 1.2E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 5.1E-04 |
| | | | Ingestion | NICKEL | 3.3E+01 | mg/kg | 5.0E-06 | mg/kg-d | 2.0E-02 | mg/kg-d | 2.5E-04 |
| | | | Ingestion | THALLIUM | 1.6E+00 | mg/kg | 2.5E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 2.5E-02 |
| | | | Ingestion | VANADIUM | 2.4E+01 | mg/kg | 3.7E-06 | mg/kg-d | 5.0E-03 | mg/kg-d | 7.3E-04 |
| | | | Ingestion | ZINC | 4.9E+02 | mg/kg | 7.3E-05 | mg/kg-d | 3.0E-01 | mg/kg-d | 2.4E-04 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.4E-01 | mg/kg | 2.0E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.0E-03 |
| | | | Ingestion | AROCLOR-1260 | 5.8E-02 | mg/kg | 8.7E-09 | mg/kg-d | 2.0E-05 | mg/kg-d | 4.4E-04 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 7.1E-01 | mg/kg | 1.1E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 7.0E-01 | mg/kg | 1.1E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.5E-04 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 9.5E-01 | mg/kg | 1.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.9E-01 | mg/kg | 2.8E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 3.9E-01 | mg/kg | 5.8E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **1.9E-01** |
| Sediment | Sediment | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 8.3E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 2.5E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 3.9E+02 | mg/kg | 2.1E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.0E-02 |
| | | | Dermal | BARIUM | 1.0E+03 | mg/kg | NA | mg/kg-d | 1.4E-02 | mg/kg-d | NA |
| | | | Dermal | CADMIUM | 4.5E+00 | mg/kg | 8.2E-09 | mg/kg-d | 2.5E-05 | mg/kg-d | 3.3E-04 |
| | | | Dermal | CHROMIUM | 4.4E+02 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 5.0E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.7E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | HC | Dermal | CYANIDE | 4.8E+01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 1.7E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 2.9E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 8.1E+01 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | NICKEL | 3.3E+01 | mg/kg | NA | mg/kg-d | 8.0E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 1.6E+00 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 2.4E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | ZINC | 4.9E+02 | mg/kg | NA | mg/kg-d | 3.0E-01 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.4E-01 | mg/kg | 3.4E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.7E-03 |
| | | | Dermal | AROCLOR-1260 | 5.8E-02 | mg/kg | 1.5E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 7.4E-04 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 7.1E-01 | mg/kg | 1.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 7.0E-01 | mg/kg | 1.6E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.5E-04 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 9.5E-01 | mg/kg | 2.2E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.9E-01 | mg/kg | 4.5E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 3.9E-01 | mg/kg | 9.2E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **7.3E-02** |
| Surface Water | Surface Water | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 6.2E+00 | mg/L | 5.6E-05 | mg/kg-d | 1.0E+00 | mg/kg-d | 5.6E-05 |
| | | | Dermal | ANTIMONY | 3.4E-03 | mg/L | 3.0E-08 | mg/kg-d | 6.0E-05 | mg/kg-d | 5.1E-04 |
| | | | Dermal | ARSENIC | 1.1E-01 | mg/L | 9.8E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.3E-03 |
| | | | Dermal | BARIUM | 4.5E-01 | mg/L | 4.1E-06 | mg/kg-d | 1.4E-02 | mg/kg-d | 2.9E-04 |
| | | | Dermal | CADMIUM | 2.5E-03 | mg/L | 2.3E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 9.1E-04 |
| | | | Dermal | CHROMIUM | 1.2E-01 | mg/L | 1.1E-06 | mg/kg-d | 7.5E-05 | mg/kg-d | 1.4E-02 |
| | | | Dermal | COBALT | 2.7E-03 | mg/L | 9.9E-09 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.3E-05 |
| | | | Dermal | COPPER | 2.8E-02 | mg/L | 2.6E-07 | mg/kg-d | 4.0E-02 | mg/kg-d | 6.4E-06 |
| | | | Dermal | CYANIDE | 8.6E-03 | mg/L | 7.8E-08 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.3E-04 |
| | | | Dermal | IRON | 1.4E+01 | mg/L | 1.2E-04 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.8E-04 |
| | | | Dermal | LEAD | 2.4E-01 | mg/L | 2.1E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.6E-01 | mg/L | 1.5E-06 | mg/kg-d | 9.6E-04 | mg/kg-d | 1.5E-03 |
| | | | Dermal | MERCURY | 2.0E-04 | mg/L | 1.8E-09 | mg/kg-d | 2.1E-05 | mg/kg-d | 8.7E-05 |
| | | | Dermal | THALLIUM | 5.4E-03 | mg/L | 4.9E-08 | mg/kg-d | 1.0E-05 | mg/kg-d | 4.9E-03 |
| | | | Dermal | VANADIUM | 5.1E-03 | mg/L | 4.6E-08 | mg/kg-d | 1.3E-04 | mg/kg-d | 3.6E-04 |
| | | | Dermal | ZINC | 4.8E-01 | mg/L | 2.6E-06 | mg/kg-d | 3.0E-01 | mg/kg-d | 8.7E-06 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **2.6E-02** |
| **Exposure Point Total (HC)** | | | | | | | | | | | **1E+00** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 4.6E+03 | mg/kg | 2.4E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 2.4E-03 |
| | | | Ingestion | ANTIMONY | 3.6E+00 | mg/kg | 1.9E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 4.6E-03 |
| | | | Ingestion | ARSENIC | 8.4E+00 | mg/kg | 2.6E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 8.6E-03 |
| | | | Ingestion | CHROMIUM | 1.8E+01 | mg/kg | 9.5E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 3.2E-03 |
| | | | Ingestion | COBALT | 8.7E-01 | mg/kg | 4.5E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.5E-03 |
| | | | Ingestion | CYANIDE | 3.7E-01 | mg/kg | 1.9E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 3.2E-04 |
| | | | Ingestion | IRON | 7.8E+03 | mg/kg | 4.0E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 5.8E-03 |
| | | | Ingestion | LEAD | 2.1E+02 | mg/kg | 1.1E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | THALLIUM | 4.4E-01 | mg/kg | 2.3E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 2.3E-02 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 1.3E-01 | mg/kg | 6.5E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.2E-04 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.6E-01 | mg/kg | 1.3E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **4.9E-02** |
| Soil | Soil (0-2 ft bgs) | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 4.6E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 3.6E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 8.4E+00 | mg/kg | 5.5E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.8E-03 |
| | | | Dermal | CHROMIUM | 1.8E+01 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 8.7E-01 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 3.7E-01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 7.8E+03 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 2.1E+02 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 4.4E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 1.3E-01 | mg/kg | 3.6E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.2E-04 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.6E-01 | mg/kg | 7.2E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **1.9E-03** |
| Soil | Particulates in Air | KWL | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 1.4E-06 | mg/m3 | 1.9E-07 | mg/m3 | 5.0E-03 | mg/m3 | 3.9E-05 |
| | | | Inhalation | ANTIMONY | 1.1E-09 | mg/m3 | 1.5E-10 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | ARSENIC | 2.6E-09 | mg/m3 | 3.6E-10 | mg/m3 | 1.5E-05 | mg/m3 | 2.4E-05 |
| | | | Inhalation | CHROMIUM | 5.7E-09 | mg/m3 | 7.8E-10 | mg/m3 | 1.0E-04 | mg/m3 | 7.8E-06 |
| | | | Inhalation | COBALT | 2.7E-10 | mg/m3 | 3.7E-11 | mg/m3 | 6.0E-06 | mg/m3 | 6.1E-06 |
| | | | Inhalation | CYANIDE | 4.9E-06 | mg/m3 | 6.7E-07 | mg/m3 | 8.0E-04 | mg/m3 | 8.4E-04 |
| | | | Inhalation | IRON | 2.4E-06 | mg/m3 | 3.3E-07 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | LEAD | 6.6E-08 | mg/m3 | 9.0E-09 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | THALLIUM | 1.4E-10 | mg/m3 | 1.9E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)PYRENE | 3.9E-11 | mg/m3 | 5.4E-12 | mg/m3 | 2.0E-06 | mg/m3 | 2.7E-06 |
| | | | Inhalation | BENZO(B)FLUORANTHENE | 7.9E-11 | mg/m3 | 1.1E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **9.2E-04** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.6E+04 | mg/kg | 2.4E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 2.4E-03 |
| | | | Ingestion | ANTIMONY | 2.0E+00 | mg/kg | 3.1E-07 | mg/kg-d | 4.0E-04 | mg/kg-d | 7.7E-04 |
| | | | Ingestion | ARSENIC | 8.8E+01 | mg/kg | 8.0E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.7E-02 |
| | | | Ingestion | CADMIUM | 7.7E+00 | mg/kg | 1.2E-06 | mg/kg-d | 1.0E-03 | mg/kg-d | 1.2E-03 |
| | | | Ingestion | CHROMIUM | 1.7E+02 | mg/kg | 2.6E-05 | mg/kg-d | 3.0E-03 | mg/kg-d | 8.7E-03 |
| | | | Ingestion | COBALT | 8.6E+00 | mg/kg | 1.3E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.3E-03 |
| | | | Ingestion | COPPER | 2.1E+02 | mg/kg | 3.1E-05 | mg/kg-d | 4.0E-02 | mg/kg-d | 7.9E-04 |
| | | | Ingestion | CYANIDE | 4.1E+00 | mg/kg | 6.2E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.0E-03 |
| | | | Ingestion | IRON | 2.7E+04 | mg/kg | 4.0E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 5.7E-03 |
| | | | Ingestion | LEAD | 1.0E+03 | mg/kg | 1.5E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.4E+02 | mg/kg | 2.1E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 8.9E-04 |
| | | | Ingestion | NICKEL | 3.7E+01 | mg/kg | 5.5E-06 | mg/kg-d | 2.0E-02 | mg/kg-d | 2.8E-04 |
| | | | Ingestion | THALLIUM | 4.7E-01 | mg/kg | 7.0E-08 | mg/kg-d | 1.0E-05 | mg/kg-d | 7.0E-03 |
| | | | Ingestion | VANADIUM | 2.6E+01 | mg/kg | 4.0E-06 | mg/kg-d | 5.0E-03 | mg/kg-d | 7.9E-04 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.6E-01 | mg/kg | 2.5E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.2E-03 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 1.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 1.6E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.4E-04 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 2.1E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 1.8E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 2.5E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 6.3E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **6.2E-02** |
| Sediment | Sediment | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.6E+04 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 2.0E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 8.8E+01 | mg/kg | 4.8E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.6E-02 |
| | | | Dermal | CADMIUM | 7.7E+00 | mg/kg | 1.4E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 5.6E-04 |
| | | | Dermal | CHROMIUM | 1.7E+02 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 8.6E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 2.1E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 4.1E+00 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 2.7E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.0E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.4E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | NICKEL | 3.7E+01 | mg/kg | NA | mg/kg-d | 8.0E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 4.7E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 2.6E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.6E-01 | mg/kg | 4.2E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 2.1E-03 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | KWL | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 2.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 2.5E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 8.4E-04 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 3.3E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 2.9E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 3.9E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 9.8E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **1.9E-02** |
| Surface Water | Surface Water | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.4E+00 | mg/L | 1.2E-05 | mg/kg-d | 1.0E+00 | mg/kg-d | 1.2E-05 |
| | | | Dermal | ANTIMONY | 3.7E-03 | mg/L | 3.4E-08 | mg/kg-d | 6.0E-05 | mg/kg-d | 5.6E-04 |
| | | | Dermal | ARSENIC | 1.7E-02 | mg/L | 1.5E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.1E-04 |
| | | | Dermal | CHROMIUM | 5.3E-03 | mg/L | 4.8E-08 | mg/kg-d | 7.5E-05 | mg/kg-d | 6.5E-04 |
| | | | Dermal | COBALT | 1.6E-03 | mg/L | 5.8E-09 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.9E-05 |
| | | | Dermal | CYANIDE | 1.8E-03 | mg/L | 1.6E-08 | mg/kg-d | 6.0E-04 | mg/kg-d | 2.7E-05 |
| | | | Dermal | IRON | 3.6E+00 | mg/L | 3.3E-05 | mg/kg-d | 7.0E-01 | mg/kg-d | 4.7E-05 |
| | | | Dermal | LEAD | 2.9E-02 | mg/L | 2.7E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 8.0E-02 | mg/L | 7.2E-07 | mg/kg-d | 9.6E-04 | mg/kg-d | 7.5E-04 |
| | | | Dermal | THALLIUM | 5.8E-03 | mg/L | 5.3E-08 | mg/kg-d | 1.0E-05 | mg/kg-d | 5.3E-03 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **7.8E-03** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **1E-01** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

**Ingestion - Soil**

$$\text{Intake Factor (IF)} = \frac{\text{IR x FS x EF x ED x CF}}{\text{BW x AT}} = \text{5.1E-07 (Adult)}$$

| | | |
|---|---|---|
| IR | Ingestion Rate (mg/day) | 100 |
| FS | Fraction from Contaminated Source | 1 |
| EF | Soil Ingestion Exposure Frequency (days/year) | 150 |
| ED | Soil Ingestion Exposure Duration (years) | 26 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 80 |
| AT | Averaging Time (days) | 9,490 |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{soil} * IF * B$

(B) presented in Table 5.1

Non-cancer Hazard = Intake/RfD

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC Value | EPC Units | Non-cancer Hazard Calculations: Intake/Exposure Value | Intake/Exposure Units | RfD/RfC Value | RfD/RfC Units | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|

**Dermal - Soil**

$$\text{Intake Factor (IF)} = \frac{SA \times AF \times EF \times ED \times CF}{BW \times AT}$$

| | | | |
|---|---|---|---|
| = | 2.2E-06 | (Adult) | |
| SA | Surface Area Exposed to Soil ($cm^2$/day) | 6,032 | |
| AF | Soil Skin Adherence Factor ($mg/cm^2$) | 0.07 | |
| EF | Soil Dermal Exposure Frequency (days/year) | 150 | |
| ED | Soil Dermal Exposure Duration (years) | 26 | |
| CF | Conversion Factor (kg/mg) | 0.000001 | |
| BW | Body Weight (kg) | 80 | |
| AT | Averaging Time (days) | 9,490 | |

$Intake_{derm}(mg/kg{\cdot}d) = EPC_{soil} * IF * ABS$
(ABS) presented in Table 5.1
Non-cancer Hazard = Intake/RfD

**Inhalation - Soil**

$$\text{Intake Factor (IF)} = \frac{EF \times ED \times ET \times CF}{AT}$$

| | | | |
|---|---|---|---|
| = | 1.4E-01 | (Adult) | |
| EF | Soil Exposure Frequency (days/year) | 150 | |
| ED | Soil Exposure Duration (years) | 26 | |
| ET | Soil Exposure Time (hours/day) | 8 | |
| CF | Conversion Factor (days/hours) | 0.042 | |
| AT | Averaging Time (days) | 9,490 | |

$EPC_{air} = EPC_{soil}$ x [1/Volatilization Factor (VF) + 1/Particulate Emissions Factor (PEF)]
Exposure = $EPC_{air}$ x IF
Non-cancer Hazard = Exposure/RfC

**Ingestion - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{IR \times FS \times EF \times ED \times CF}{BW \times AT}$$

| | | | |
|---|---|---|---|
| = | 1.5E-07 | (Adult) | |
| IR | Ingestion Rate (mg/day) | 100 | |
| FS | Fraction from Contaminated Source | 1 | |
| EF | Sediment Ingestion Exposure Frequency (days/year) | 44 | |
| ED | Sediment Ingestion Exposure Duration (years) | 26 | |
| CF | Conversion Factor (kg/mg) | 0.000001 | |
| BW | Body Weight (kg) | 80 | |
| AT | Averaging Time (days) | 9,490 | |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{sediment} * IF * B$
(B) presented in Table 5.1
Non-cancer Hazard = Intake/RfD

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |

**Dermal - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{\text{SA x AF x EF x ED x CF}}{\text{BW x AT}}$$

| | | | |
|---|---|---|---|
| = | 1.8E-06 | (Adult) | $Intake_{derm}$(mg/kg·d) = $EPC_{sediment}$*IF*ABS |
| SA | Surface Area Exposed to Sediment (cm²/day) | 6,032 | (ABS) presented in Table 5.1 |
| AF | Sediment Skin Adherence Factor (mg/cm²) | 0.2 | Non-cancer Hazard = Intake/RfD |
| EF | Sediment Dermal Exposure Frequency (days/year) | 44 | |
| ED | Sediment Dermal Exposure Duration (years) | 26 | |
| CF | Conversion Factor (kg/mg) | 0.000001 | |
| BW | Body Weight (kg) | 80 | |
| AT | Averaging Time (days) | 9,490 | |

**Dermal - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{\text{SA x EV x EF x ED}}{\text{BW x AT}}$$

| | | | |
|---|---|---|---|
| = | 9.1E+00 | (Adult) | $Intake_{derm}$(mg/kg·d) = IF x Absorbed Dose per Event ($DA_{Event}$) |
| SA | Surface Area Exposed to Surface Water (cm²) | 6,032 | ($DA_{event}$) presented in Table 4.6 |
| EF | Surface Water Dermal Exposure Frequency (days/year) | 44 | Non-cancer Hazard = Intake/RfD |
| ED | Surface Water Dermal Exposure Duration (years) | 26 | |
| EV | Events per Day (events/day) | 1 | |
| BW | Body Weight (kg) | 80 | |
| AT | Averaging Time (days) | 9,490 | |

**Table 7.11**
**Calculation of Chemical Non-cancer Hazards for Recreator**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.0E+03 | mg/kg | 8.1E-04 | mg/kg-d | 1.0E+00 | mg/kg-d | 8.1E-04 |
| | | | Ingestion | ANTIMONY | 2.3E+00 | mg/kg | 6.2E-07 | mg/kg-d | 4.0E-04 | mg/kg-d | 1.5E-03 |
| | | | Ingestion | ARSENIC | 9.8E+00 | mg/kg | 1.6E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.4E-03 |
| | | | Ingestion | CHROMIUM | 1.6E+01 | mg/kg | 4.4E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 1.5E-03 |
| | | | Ingestion | COBALT | 6.2E+00 | mg/kg | 1.7E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.6E-03 |
| | | | Ingestion | COPPER | 1.0E+02 | mg/kg | 2.8E-05 | mg/kg-d | 4.0E-02 | mg/kg-d | 6.9E-04 |
| | | | Ingestion | CYANIDE | 2.7E+00 | mg/kg | 7.3E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.2E-03 |
| | | | Ingestion | IRON | 8.0E+03 | mg/kg | 2.2E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 3.1E-03 |
| | | | Ingestion | LEAD | 1.7E+02 | mg/kg | 4.6E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 3.0E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 1.2E-03 |
| | | | Ingestion | THALLIUM | 8.6E-01 | mg/kg | 2.3E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 2.3E-02 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 6.5E-02 | mg/kg | 1.8E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 8.8E-04 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 5.4E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 4.0E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.3E-02 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 8.0E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 1.7E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | CHRYSENE | 3.0E+01 | mg/kg | 8.1E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 4.1E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 1.1E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | **TICs** | | | | | | | |
| | | | Ingestion | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 3.3E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **5.9E-02** |
| Sediment | Sediment | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.0E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 2.3E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 9.8E+00 | mg/kg | 7.5E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.5E-03 |
| | | | Dermal | CHROMIUM | 1.6E+01 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 6.2E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.0E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 2.7E+00 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 8.0E+03 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.7E+02 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 8.6E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 6.5E-02 | mg/kg | 2.3E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.1E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 6.5E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 4.8E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.6E-02 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 9.7E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 2.1E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | CHRYSENE | 3.0E+01 | mg/kg | 9.7E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 4.9E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 1.3E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | **TICs** | | | | | | | |
| | | | Dermal | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 3.9E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **2.0E-02** |
| Surface Water | Surface Water | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ARSENIC | 7.8E-03 | mg/L | 9.9E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.3E-04 |
| | | | Dermal | CHROMIUM | 2.6E-03 | mg/L | 3.2E-08 | mg/kg-d | 7.5E-05 | mg/kg-d | 4.3E-04 |
| | | | Dermal | COBALT | 2.1E-03 | mg/L | 1.1E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.6E-05 |
| | | | Dermal | CYANIDE | 4.4E-03 | mg/L | 5.6E-08 | mg/kg-d | 6.0E-04 | mg/kg-d | 9.3E-05 |
| | | | Dermal | IRON | 1.1E+01 | mg/L | 1.4E-04 | mg/kg-d | 7.0E-01 | mg/kg-d | 2.0E-04 |
| | | | Dermal | MANGANESE | 9.5E-01 | mg/L | 1.2E-05 | mg/kg-d | 9.6E-04 | mg/kg-d | 1.2E-02 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 1.8E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 2.0E-04 | mg/L | 8.3E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.8E-02 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 3.2E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 2.3E-04 | mg/kg-d | 2.0E-02 | mg/kg-d | 1.1E-02 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 2.7E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 4.4E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **5.3E-02** |
| **Exposure Point Total (SL)** | | | | | | | | | | | **1E-01** |
| Soil | Soil (0-2 ft bgs) | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.8E+03 | mg/kg | 3.5E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 3.5E-03 |
| | | | Ingestion | ANTIMONY | 1.4E+00 | mg/kg | 1.3E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 3.3E-03 |
| | | | Ingestion | ARSENIC | 1.1E+02 | mg/kg | 6.4E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.1E-01 |
| | | | Ingestion | CADMIUM | 2.3E+00 | mg/kg | 2.1E-06 | mg/kg-d | 1.0E-03 | mg/kg-d | 2.1E-03 |
| | | | Ingestion | CHROMIUM | 4.0E+01 | mg/kg | 3.7E-05 | mg/kg-d | 3.0E-03 | mg/kg-d | 1.2E-02 |
| | | | Ingestion | COBALT | 1.1E+00 | mg/kg | 1.0E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.4E-03 |
| | | | Ingestion | CYANIDE | 6.0E-01 | mg/kg | 5.5E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 9.2E-04 |
| | | | Ingestion | IRON | 6.3E+03 | mg/kg | 5.8E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 8.3E-03 |
| | | | Ingestion | LEAD | 1.9E+02 | mg/kg | 1.7E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | THALLIUM | 8.5E-01 | mg/kg | 7.9E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 7.9E-02 |
| | | | Ingestion | VANADIUM | 1.2E+01 | mg/kg | 1.2E-05 | mg/kg-d | 5.0E-03 | mg/kg-d | 2.3E-03 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | BWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E-01 | mg/kg | 1.3E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.2E-04 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **3.3E-01** |
| Soil | Soil (0-2 ft bgs) | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.8E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 1.4E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 1.1E+02 | mg/kg | 1.0E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.5E-02 |
| | | | Dermal | CADMIUM | 2.3E+00 | mg/kg | 6.9E-09 | mg/kg-d | 2.5E-05 | mg/kg-d | 2.8E-04 |
| | | | Dermal | CHROMIUM | 4.0E+01 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 1.1E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 6.0E-01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 6.3E+03 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.9E+02 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 8.5E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 1.2E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 1.4E-01 | mg/kg | 5.3E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.8E-04 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **3.5E-02** |
| Soil | Particulates in Air | BWL | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 1.2E-06 | mg/m3 | 1.6E-07 | mg/m3 | 5.0E-03 | mg/m3 | 3.2E-05 |
| | | | Inhalation | ANTIMONY | 4.4E-10 | mg/m3 | 6.0E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | ARSENIC | 3.6E-08 | mg/m3 | 4.9E-09 | mg/m3 | 1.5E-05 | mg/m3 | 3.2E-04 |
| | | | Inhalation | CADMIUM | 7.1E-10 | mg/m3 | 9.7E-11 | mg/m3 | 1.0E-05 | mg/m3 | 9.7E-06 |
| | | | Inhalation | CHROMIUM | 1.2E-08 | mg/m3 | 1.7E-09 | mg/m3 | 1.0E-04 | mg/m3 | 1.7E-05 |
| | | | Inhalation | COBALT | 3.4E-10 | mg/m3 | 4.6E-11 | mg/m3 | 6.0E-06 | mg/m3 | 7.7E-06 |
| | | | Inhalation | CYANIDE | 7.9E-06 | mg/m3 | 1.1E-06 | mg/m3 | 8.0E-04 | mg/m3 | 1.4E-03 |
| | | | Inhalation | IRON | 1.9E-06 | mg/m3 | 2.7E-07 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | LEAD | 5.8E-08 | mg/m3 | 7.9E-09 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | THALLIUM | 2.6E-10 | mg/m3 | 3.6E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | VANADIUM | 3.9E-09 | mg/m3 | 5.3E-10 | mg/m3 | 1.0E-04 | mg/m3 | 5.3E-06 |
| | | | Inhalation | **PEST/PCB** | | | | | | | |
| | | | Inhalation | BENZO(A)PYRENE | 4.2E-11 | mg/m3 | 5.7E-12 | mg/m3 | 2.0E-06 | mg/m3 | 2.9E-06 |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **1.8E-03** |
| Sediment | Sediment | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.5E+04 | mg/kg | 4.0E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 4.0E-03 |
| | | | Ingestion | ANTIMONY | 7.3E+00 | mg/kg | 2.0E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 4.9E-03 |
| | | | Ingestion | ARSENIC | 2.8E+02 | mg/kg | 4.6E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.5E-01 |
| | | | Ingestion | CADMIUM | 1.3E+01 | mg/kg | 3.6E-06 | mg/kg-d | 1.0E-03 | mg/kg-d | 3.6E-03 |
| | | | Ingestion | CHROMIUM | 1.6E+02 | mg/kg | 4.2E-05 | mg/kg-d | 3.0E-03 | mg/kg-d | 1.4E-02 |

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| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Ingestion | COBALT | 1.7E+01 | mg/kg | 4.5E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.5E-02 |
| | | | Ingestion | COPPER | 1.8E+02 | mg/kg | 4.8E-05 | mg/kg-d | 4.0E-02 | mg/kg-d | 1.2E-03 |
| | | | Ingestion | CYANIDE | 1.5E+01 | mg/kg | 4.1E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 6.9E-03 |
| | | | Ingestion | IRON | 4.2E+04 | mg/kg | 1.1E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.6E-02 |
| | | | Ingestion | LEAD | 1.5E+03 | mg/kg | 4.0E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 3.0E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 1.2E-03 |
| | | | Ingestion | VANADIUM | 5.6E+01 | mg/kg | 1.5E-05 | mg/kg-d | 5.0E-03 | mg/kg-d | 3.0E-03 |
| | | | Ingestion | ZINC | 1.1E+03 | mg/kg | 3.0E-04 | mg/kg-d | 3.0E-01 | mg/kg-d | 1.0E-03 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 8.0E-02 | mg/kg | 2.2E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.1E-03 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 3.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 3.7E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.2E-03 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 5.5E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 5.3E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 7.8E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 2.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | NAPHTHALENE | 2.8E+00 | mg/kg | 7.7E-07 | mg/kg-d | 2.0E-02 | mg/kg-d | 3.9E-05 |
| | | | Ingestion | **VOCs** | | | | | | | |
| | | | Ingestion | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | 1.8E-08 | mg/kg-d | 5.0E-04 | mg/kg-d | 3.6E-05 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **2.3E-01** |
| Sediment | Sediment | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.5E+04 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 7.3E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 2.8E+02 | mg/kg | 2.1E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.2E-02 |
| | | | Dermal | CADMIUM | 1.3E+01 | mg/kg | 3.4E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 1.3E-03 |
| | | | Dermal | CHROMIUM | 1.6E+02 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 1.7E+01 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.8E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 1.5E+01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 4.2E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.5E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 5.6E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | ZINC | 1.1E+03 | mg/kg | NA | mg/kg-d | 3.0E-01 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 8.0E-02 | mg/kg | 2.8E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.4E-03 |

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| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 4.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 4.5E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.5E-03 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 6.6E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 6.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 9.4E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 2.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | NAPHTHALENE | 2.8E+00 | mg/kg | 9.3E-07 | mg/kg-d | 2.0E-02 | mg/kg-d | 4.7E-05 |
| | | | Dermal | **VOCs** | | | | | | | |
| | | | Dermal | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | NA | mg/kg-d | 5.0E-04 | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **7.6E-02** |
| Surface Water | Surface Water | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.3E+00 | mg/L | 1.6E-05 | mg/kg-d | 1.0E+00 | mg/kg-d | 1.6E-05 |
| | | | Dermal | ANTIMONY | 1.2E-03 | mg/L | 1.5E-08 | mg/kg-d | 6.0E-05 | mg/kg-d | 2.4E-04 |
| | | | Dermal | ARSENIC | 3.1E-02 | mg/L | 3.9E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.3E-03 |
| | | | Dermal | CADMIUM | 6.2E-04 | mg/L | 7.9E-09 | mg/kg-d | 2.5E-05 | mg/kg-d | 3.1E-04 |
| | | | Dermal | CHROMIUM | 4.5E-03 | mg/L | 5.7E-08 | mg/kg-d | 7.5E-05 | mg/kg-d | 7.5E-04 |
| | | | Dermal | COBALT | 1.0E-03 | mg/L | 5.1E-09 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.7E-05 |
| | | | Dermal | CYANIDE | 2.0E-03 | mg/L | 2.5E-08 | mg/kg-d | 6.0E-04 | mg/kg-d | 4.2E-05 |
| | | | Dermal | IRON | 6.5E+00 | mg/L | 8.2E-05 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.2E-04 |
| | | | Dermal | LEAD | 2.6E-02 | mg/L | 3.2E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 7.0E-02 | mg/L | 8.9E-07 | mg/kg-d | 9.6E-04 | mg/kg-d | 9.2E-04 |
| | | | Dermal | THALLIUM | 1.2E-03 | mg/L | 1.6E-08 | mg/kg-d | 1.0E-05 | mg/kg-d | 1.6E-03 |
| | | | Dermal | VANADIUM | 2.5E-03 | mg/L | 3.1E-08 | mg/kg-d | 1.3E-04 | mg/kg-d | 2.4E-04 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 3.4E-05 | mg/L | 1.4E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.7E-03 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1.0E-02** |
| **Exposure Point Total (BWL)** | | | | | | | | | | | **7E-01** |
| Soil | Soil (0-2 ft bgs) | HC | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 9.2E+03 | mg/kg | 8.5E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 8.5E-03 |
| | | | Ingestion | ANTIMONY | 5.3E+00 | mg/kg | 4.9E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 1.2E-02 |
| | | | Ingestion | ARSENIC | 5.0E+02 | mg/kg | 2.8E-04 | mg/kg-d | 3.0E-04 | mg/kg-d | 9.2E-01 |
| | | | Ingestion | BARIUM | 1.9E+03 | mg/kg | 1.8E-03 | mg/kg-d | 2.0E-01 | mg/kg-d | 9.0E-03 |
| | | | Ingestion | CADMIUM | 2.9E+00 | mg/kg | 2.7E-06 | mg/kg-d | 1.0E-03 | mg/kg-d | 2.7E-03 |
| | | | Ingestion | CHROMIUM | 6.4E+02 | mg/kg | 6.0E-04 | mg/kg-d | 3.0E-03 | mg/kg-d | 2.0E-01 |
| | | | Ingestion | COBALT | 6.3E+00 | mg/kg | 5.8E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.9E-02 |
| | | | Ingestion | COPPER | 1.4E+02 | mg/kg | 1.3E-04 | mg/kg-d | 4.0E-02 | mg/kg-d | 3.3E-03 |
| | | | Ingestion | CYANIDE | 4.9E+01 | mg/kg | 4.5E-05 | mg/kg-d | 6.0E-04 | mg/kg-d | 7.6E-02 |
| | | | Ingestion | IRON | 2.8E+04 | mg/kg | 2.6E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 3.7E-02 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | HC | Ingestion | LEAD | 3.3E+03 | mg/kg | 3.0E-03 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 3.4E+02 | mg/kg | 3.1E-04 | mg/kg-d | 2.4E-02 | mg/kg-d | 1.3E-02 |
| | | | Ingestion | MERCURY | 7.7E-01 | mg/kg | 7.1E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.4E-03 |
| | | | Ingestion | NICKEL | 1.4E+01 | mg/kg | 1.3E-05 | mg/kg-d | 2.0E-02 | mg/kg-d | 6.3E-04 |
| | | | Ingestion | THALLIUM | 6.6E-01 | mg/kg | 6.1E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 6.1E-02 |
| | | | Ingestion | VANADIUM | 3.0E+01 | mg/kg | 2.8E-05 | mg/kg-d | 5.0E-03 | mg/kg-d | 5.7E-03 |
| | | | Ingestion | ZINC | 5.3E+02 | mg/kg | 4.9E-04 | mg/kg-d | 3.0E-01 | mg/kg-d | 1.6E-03 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 5.5E-02 | mg/kg | 5.1E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 2.5E-03 |
| | | | Ingestion | AROCLOR-1260 | 1.7E-01 | mg/kg | 1.5E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 7.7E-03 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.6E+00 | mg/kg | 1.5E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.8E+00 | mg/kg | 1.6E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.4E-03 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 1.9E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.8E+00 | mg/kg | 1.7E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 3.0E-01 | mg/kg | 2.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.7E-01 | mg/kg | 7.2E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | NAPHTHALENE | 2.7E-01 | mg/kg | 2.5E-07 | mg/kg-d | 2.0E-02 | mg/kg-d | 1.2E-05 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **1.4E+00** |
| Soil | Soil (0-2 ft bgs) | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 9.2E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 5.3E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 5.0E+02 | mg/kg | 4.5E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.5E-01 |
| | | | Dermal | BARIUM | 1.9E+03 | mg/kg | NA | mg/kg-d | 1.4E-02 | mg/kg-d | NA |
| | | | Dermal | CADMIUM | 2.9E+00 | mg/kg | 8.8E-09 | mg/kg-d | 2.5E-05 | mg/kg-d | 3.5E-04 |
| | | | Dermal | CHROMIUM | 6.4E+02 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 6.3E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.4E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 4.9E+01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 2.8E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 3.3E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 3.4E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | MERCURY | 7.7E-01 | mg/kg | NA | mg/kg-d | 2.1E-05 | mg/kg-d | NA |
| | | | Dermal | NICKEL | 1.4E+01 | mg/kg | NA | mg/kg-d | 8.0E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 6.6E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 3.0E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | ZINC | 5.3E+02 | mg/kg | NA | mg/kg-d | 3.0E-01 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 5.5E-02 | mg/kg | 2.3E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.2E-03 |
| | | | Dermal | AROCLOR-1260 | 1.7E-01 | mg/kg | 7.0E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 3.5E-03 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | HC | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.6E+00 | mg/kg | 6.3E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.8E+00 | mg/kg | 6.9E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.3E-03 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 7.9E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.8E+00 | mg/kg | 7.2E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 3.0E-01 | mg/kg | 1.2E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.7E-01 | mg/kg | 3.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | NAPHTHALENE | 2.7E-01 | mg/kg | 1.0E-07 | mg/kg-d | 2.0E-02 | mg/kg-d | 5.2E-06 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **1.6E-01** |
| Soil | Particulates in Air | HC | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 2.8E-06 | mg/m3 | 3.9E-07 | mg/m3 | 5.0E-03 | mg/m3 | 7.8E-05 |
| | | | Inhalation | ANTIMONY | 1.6E-09 | mg/m3 | 2.3E-10 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | ARSENIC | 1.5E-07 | mg/m3 | 2.1E-08 | mg/m3 | 1.5E-05 | mg/m3 | 1.4E-03 |
| | | | Inhalation | BARIUM | 6.0E-07 | mg/m3 | 8.2E-08 | mg/m3 | 5.0E-04 | mg/m3 | 1.6E-04 |
| | | | Inhalation | CADMIUM | 9.0E-10 | mg/m3 | 1.2E-10 | mg/m3 | 1.0E-05 | mg/m3 | 1.2E-05 |
| | | | Inhalation | CHROMIUM | 2.0E-07 | mg/m3 | 2.7E-08 | mg/m3 | 1.0E-04 | mg/m3 | 2.7E-04 |
| | | | Inhalation | COBALT | 1.9E-09 | mg/m3 | 2.7E-10 | mg/m3 | 6.0E-06 | mg/m3 | 4.4E-05 |
| | | | Inhalation | COPPER | 4.4E-08 | mg/m3 | 6.0E-09 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | CYANIDE | 6.5E-04 | mg/m3 | 8.9E-05 | mg/m3 | 8.0E-04 | mg/m3 | 1.1E-01 |
| | | | Inhalation | IRON | 8.5E-06 | mg/m3 | 1.2E-06 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | LEAD | 1.0E-06 | mg/m3 | 1.4E-07 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | MANGANESE | 1.0E-07 | mg/m3 | 1.4E-08 | mg/m3 | 5.0E-05 | mg/m3 | 2.9E-04 |
| | | | Inhalation | MERCURY | 2.4E-10 | mg/m3 | 3.3E-11 | mg/m3 | 3.0E-04 | mg/m3 | 1.1E-07 |
| | | | Inhalation | NICKEL | 4.2E-09 | mg/m3 | 5.8E-10 | mg/m3 | 9.0E-05 | mg/m3 | 6.4E-06 |
| | | | Inhalation | THALLIUM | 2.0E-10 | mg/m3 | 2.8E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | VANADIUM | 9.4E-09 | mg/m3 | 1.3E-09 | mg/m3 | 1.0E-04 | mg/m3 | 1.3E-05 |
| | | | Inhalation | ZINC | 1.6E-07 | mg/m3 | 2.3E-08 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | **PEST/PCB** | | | | | | | |
| | | | Inhalation | AROCLOR-1254 | 5.1E-08 | mg/m3 | 7.0E-09 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | AROCLOR-1260 | 9.8E-08 | mg/m3 | 1.3E-08 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)ANTHRACENE | 2.8E-07 | mg/m3 | 3.9E-08 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | BENZO(A)PYRENE | 5.4E-10 | mg/m3 | 7.4E-11 | mg/m3 | 2.0E-06 | mg/m3 | 3.7E-05 |
| | | | Inhalation | BENZO(B)FLUORANTHENE | 6.2E-10 | mg/m3 | 8.5E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | BENZO(K)FLUORANTHENE | 5.7E-10 | mg/m3 | 7.8E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | DIBENZO(A,H)ANTHRACENE | 9.2E-11 | mg/m3 | 1.3E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | INDENO(1,2,3-CD)PYRENE | 2.4E-10 | mg/m3 | 3.3E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | NAPHTHALENE | 4.5E-06 | mg/m3 | 6.1E-07 | mg/m3 | 3.0E-03 | mg/m3 | 2.0E-04 |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **1.1E-01** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | HC | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 8.3E+03 | mg/kg | 2.3E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 2.3E-03 |
| | | | Ingestion | ANTIMONY | 2.5E+00 | mg/kg | 6.7E-07 | mg/kg-d | 4.0E-04 | mg/kg-d | 1.7E-03 |
| | | | Ingestion | ARSENIC | 3.9E+02 | mg/kg | 6.3E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.1E-01 |
| | | | Ingestion | BARIUM | 1.0E+03 | mg/kg | 2.7E-04 | mg/kg-d | 2.0E-01 | mg/kg-d | 1.4E-03 |
| | | | Ingestion | CADMIUM | 4.5E+00 | mg/kg | 1.2E-06 | mg/kg-d | 1.0E-03 | mg/kg-d | 1.2E-03 |
| | | | Ingestion | CHROMIUM | 4.4E+02 | mg/kg | 1.2E-04 | mg/kg-d | 3.0E-03 | mg/kg-d | 4.0E-02 |
| | | | Ingestion | COBALT | 5.0E+00 | mg/kg | 1.4E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.5E-03 |
| | | | Ingestion | COPPER | 1.7E+02 | mg/kg | 4.6E-05 | mg/kg-d | 4.0E-02 | mg/kg-d | 1.2E-03 |
| | | | Ingestion | CYANIDE | 4.8E+01 | mg/kg | 1.3E-05 | mg/kg-d | 6.0E-04 | mg/kg-d | 2.2E-02 |
| | | | Ingestion | IRON | 1.7E+04 | mg/kg | 4.7E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 6.7E-03 |
| | | | Ingestion | LEAD | 2.9E+03 | mg/kg | 7.8E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 8.1E+01 | mg/kg | 2.2E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 9.2E-04 |
| | | | Ingestion | NICKEL | 3.3E+01 | mg/kg | 9.1E-06 | mg/kg-d | 2.0E-02 | mg/kg-d | 4.5E-04 |
| | | | Ingestion | THALLIUM | 1.6E+00 | mg/kg | 4.5E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 4.5E-02 |
| | | | Ingestion | VANADIUM | 2.4E+01 | mg/kg | 6.6E-06 | mg/kg-d | 5.0E-03 | mg/kg-d | 1.3E-03 |
| | | | Ingestion | ZINC | 4.9E+02 | mg/kg | 1.3E-04 | mg/kg-d | 3.0E-01 | mg/kg-d | 4.4E-04 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.4E-01 | mg/kg | 3.7E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.8E-03 |
| | | | Ingestion | AROCLOR-1260 | 5.8E-02 | mg/kg | 1.6E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 7.9E-04 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 7.1E-01 | mg/kg | 1.9E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 7.0E-01 | mg/kg | 1.9E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 6.3E-04 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 9.5E-01 | mg/kg | 2.6E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.9E-01 | mg/kg | 5.1E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 3.9E-01 | mg/kg | 1.1E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **3.4E-01** |
| Sediment | Sediment | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 8.3E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 2.5E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 3.9E+02 | mg/kg | 2.9E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 9.7E-02 |
| | | | Dermal | BARIUM | 1.0E+03 | mg/kg | NA | mg/kg-d | 1.4E-02 | mg/kg-d | NA |
| | | | Dermal | CADMIUM | 4.5E+00 | mg/kg | 1.1E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 4.6E-04 |
| | | | Dermal | CHROMIUM | 4.4E+02 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 5.0E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.7E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | HC | Dermal | CYANIDE | 4.8E+01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 1.7E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 2.9E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 8.1E+01 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | NICKEL | 3.3E+01 | mg/kg | NA | mg/kg-d | 8.0E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 1.6E+00 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 2.4E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | ZINC | 4.9E+02 | mg/kg | NA | mg/kg-d | 3.0E-01 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.4E-01 | mg/kg | 4.8E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 2.4E-03 |
| | | | Dermal | AROCLOR-1260 | 5.8E-02 | mg/kg | 2.0E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.0E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 7.1E-01 | mg/kg | 2.3E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 7.0E-01 | mg/kg | 2.3E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.6E-04 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 9.5E-01 | mg/kg | 3.1E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.9E-01 | mg/kg | 6.2E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 3.9E-01 | mg/kg | 1.3E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **1.0E-01** |
| Surface Water | Surface Water | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 6.2E+00 | mg/L | 7.8E-05 | mg/kg-d | 1.0E+00 | mg/kg-d | 7.8E-05 |
| | | | Dermal | ANTIMONY | 3.4E-03 | mg/L | 4.2E-08 | mg/kg-d | 6.0E-05 | mg/kg-d | 7.0E-04 |
| | | | Dermal | ARSENIC | 1.1E-01 | mg/L | 1.4E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.5E-03 |
| | | | Dermal | BARIUM | 4.5E-01 | mg/L | 5.7E-06 | mg/kg-d | 1.4E-02 | mg/kg-d | 4.1E-04 |
| | | | Dermal | CADMIUM | 2.5E-03 | mg/L | 3.1E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 1.3E-03 |
| | | | Dermal | CHROMIUM | 1.2E-01 | mg/L | 1.5E-06 | mg/kg-d | 7.5E-05 | mg/kg-d | 2.0E-02 |
| | | | Dermal | COBALT | 2.7E-03 | mg/L | 1.4E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.6E-05 |
| | | | Dermal | COPPER | 2.8E-02 | mg/L | 3.6E-07 | mg/kg-d | 4.0E-02 | mg/kg-d | 8.9E-06 |
| | | | Dermal | CYANIDE | 8.6E-03 | mg/L | 1.1E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.8E-04 |
| | | | Dermal | IRON | 1.4E+01 | mg/L | 1.7E-04 | mg/kg-d | 7.0E-01 | mg/kg-d | 2.5E-04 |
| | | | Dermal | LEAD | 2.4E-01 | mg/L | 3.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.6E-01 | mg/L | 2.1E-06 | mg/kg-d | 9.6E-04 | mg/kg-d | 2.1E-03 |
| | | | Dermal | MERCURY | 2.0E-04 | mg/L | 2.6E-09 | mg/kg-d | 2.1E-05 | mg/kg-d | 1.2E-04 |
| | | | Dermal | THALLIUM | 5.4E-03 | mg/L | 6.8E-08 | mg/kg-d | 1.0E-05 | mg/kg-d | 6.8E-03 |
| | | | Dermal | VANADIUM | 5.1E-03 | mg/L | 6.4E-08 | mg/kg-d | 1.3E-04 | mg/kg-d | 5.0E-04 |
| | | | Dermal | ZINC | 4.8E-01 | mg/L | 3.6E-06 | mg/kg-d | 3.0E-01 | mg/kg-d | 1.2E-05 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **3.7E-02** |
| **Exposure Point Total (HC)** | | | | | | | | | | | **2E+00** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 4.6E+03 | mg/kg | 4.3E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 4.3E-03 |
| | | | Ingestion | ANTIMONY | 3.6E+00 | mg/kg | 3.4E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 8.4E-03 |
| | | | Ingestion | ARSENIC | 8.4E+00 | mg/kg | 4.7E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.6E-02 |
| | | | Ingestion | CHROMIUM | 1.8E+01 | mg/kg | 1.7E-05 | mg/kg-d | 3.0E-03 | mg/kg-d | 5.7E-03 |
| | | | Ingestion | COBALT | 8.7E-01 | mg/kg | 8.1E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.7E-03 |
| | | | Ingestion | CYANIDE | 3.7E-01 | mg/kg | 3.4E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 5.7E-04 |
| | | | Ingestion | IRON | 7.8E+03 | mg/kg | 7.3E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.0E-02 |
| | | | Ingestion | LEAD | 2.1E+02 | mg/kg | 2.0E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | THALLIUM | 4.4E-01 | mg/kg | 4.1E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 4.1E-02 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 1.3E-01 | mg/kg | 1.2E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.9E-04 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.6E-01 | mg/kg | 2.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **8.9E-02** |
| Soil | Soil (0-2 ft bgs) | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 4.6E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 3.6E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 8.4E+00 | mg/kg | 7.6E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.5E-03 |
| | | | Dermal | CHROMIUM | 1.8E+01 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 8.7E-01 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 3.7E-01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 7.8E+03 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 2.1E+02 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 4.4E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 1.3E-01 | mg/kg | 5.0E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.7E-04 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.6E-01 | mg/kg | 1.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **2.7E-03** |
| Soil | Particulates in Air | KWL | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 1.4E-06 | mg/m3 | 1.9E-07 | mg/m3 | 5.0E-03 | mg/m3 | 3.9E-05 |
| | | | Inhalation | ANTIMONY | 1.1E-09 | mg/m3 | 1.5E-10 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | ARSENIC | 2.6E-09 | mg/m3 | 3.6E-10 | mg/m3 | 1.5E-05 | mg/m3 | 2.4E-05 |
| | | | Inhalation | CHROMIUM | 5.7E-09 | mg/m3 | 7.8E-10 | mg/m3 | 1.0E-04 | mg/m3 | 7.8E-06 |
| | | | Inhalation | COBALT | 2.7E-10 | mg/m3 | 3.7E-11 | mg/m3 | 6.0E-06 | mg/m3 | 6.1E-06 |
| | | | Inhalation | CYANIDE | 4.9E-06 | mg/m3 | 6.7E-07 | mg/m3 | 8.0E-04 | mg/m3 | 8.4E-04 |
| | | | Inhalation | IRON | 2.4E-06 | mg/m3 | 3.3E-07 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | LEAD | 6.6E-08 | mg/m3 | 9.0E-09 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | THALLIUM | 1.4E-10 | mg/m3 | 1.9E-11 | mg/m3 | NA | mg/m3 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Particulates in Air | KWL | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)PYRENE | 3.9E-11 | mg/m3 | 5.4E-12 | mg/m3 | 2.0E-06 | mg/m3 | 2.7E-06 |
| | | | Inhalation | BENZO(B)FLUORANTHENE | 7.9E-11 | mg/m3 | 1.1E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **9.2E-04** |
| Sediment | Sediment | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.6E+04 | mg/kg | 4.4E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 4.4E-03 |
| | | | Ingestion | ANTIMONY | 2.0E+00 | mg/kg | 5.5E-07 | mg/kg-d | 4.0E-04 | mg/kg-d | 1.4E-03 |
| | | | Ingestion | ARSENIC | 8.8E+01 | mg/kg | 1.4E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.8E-02 |
| | | | Ingestion | CADMIUM | 7.7E+00 | mg/kg | 2.1E-06 | mg/kg-d | 1.0E-03 | mg/kg-d | 2.1E-03 |
| | | | Ingestion | CHROMIUM | 1.7E+02 | mg/kg | 4.7E-05 | mg/kg-d | 3.0E-03 | mg/kg-d | 1.6E-02 |
| | | | Ingestion | COBALT | 8.6E+00 | mg/kg | 2.3E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.8E-03 |
| | | | Ingestion | COPPER | 2.1E+02 | mg/kg | 5.7E-05 | mg/kg-d | 4.0E-02 | mg/kg-d | 1.4E-03 |
| | | | Ingestion | CYANIDE | 4.1E+00 | mg/kg | 1.1E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.9E-03 |
| | | | Ingestion | IRON | 2.7E+04 | mg/kg | 7.2E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.0E-02 |
| | | | Ingestion | LEAD | 1.0E+03 | mg/kg | 2.8E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.4E+02 | mg/kg | 3.9E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 1.6E-03 |
| | | | Ingestion | NICKEL | 3.7E+01 | mg/kg | 1.0E-05 | mg/kg-d | 2.0E-02 | mg/kg-d | 5.0E-04 |
| | | | Ingestion | THALLIUM | 4.7E-01 | mg/kg | 1.3E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 1.3E-02 |
| | | | Ingestion | VANADIUM | 2.6E+01 | mg/kg | 7.1E-06 | mg/kg-d | 5.0E-03 | mg/kg-d | 1.4E-03 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.6E-01 | mg/kg | 4.5E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 2.2E-03 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 3.1E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 2.9E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 9.7E-04 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 3.8E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 3.3E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 4.4E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 1.1E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **1.1E-01** |
| Sediment | Sediment | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.6E+04 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 2.0E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 8.8E+01 | mg/kg | 6.7E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.2E-02 |
| | | | Dermal | CADMIUM | 7.7E+00 | mg/kg | 1.9E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 7.8E-04 |
| | | | Dermal | CHROMIUM | 1.7E+02 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 8.6E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 2.1E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 4.1E+00 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 2.7E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | KWL | Dermal | LEAD | 1.0E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.4E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | NICKEL | 3.7E+01 | mg/kg | NA | mg/kg-d | 8.0E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 4.7E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 2.6E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.6E-01 | mg/kg | 5.8E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 2.9E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 3.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 3.5E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.2E-03 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 4.5E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 4.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 5.3E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 1.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **2.7E-02** |
| Surface Water | Surface Water | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.4E+00 | mg/L | 1.7E-05 | mg/kg-d | 1.0E+00 | mg/kg-d | 1.7E-05 |
| | | | Dermal | ANTIMONY | 3.7E-03 | mg/L | 4.7E-08 | mg/kg-d | 6.0E-05 | mg/kg-d | 7.8E-04 |
| | | | Dermal | ARSENIC | 1.7E-02 | mg/L | 2.1E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.0E-04 |
| | | | Dermal | CHROMIUM | 5.3E-03 | mg/L | 6.7E-08 | mg/kg-d | 7.5E-05 | mg/kg-d | 9.0E-04 |
| | | | Dermal | COBALT | 1.6E-03 | mg/L | 8.1E-09 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.7E-05 |
| | | | Dermal | CYANIDE | 1.8E-03 | mg/L | 2.3E-08 | mg/kg-d | 6.0E-04 | mg/kg-d | 3.8E-05 |
| | | | Dermal | IRON | 3.6E+00 | mg/L | 4.5E-05 | mg/kg-d | 7.0E-01 | mg/kg-d | 6.5E-05 |
| | | | Dermal | LEAD | 2.9E-02 | mg/L | 3.7E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 8.0E-02 | mg/L | 1.0E-06 | mg/kg-d | 9.6E-04 | mg/kg-d | 1.0E-03 |
| | | | Dermal | THALLIUM | 5.8E-03 | mg/L | 7.3E-08 | mg/kg-d | 1.0E-05 | mg/kg-d | 7.3E-03 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1.1E-02** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **2E-01** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |

**Ingestion - Soil**

$$\text{Intake Factor (IF)} = \frac{IR \times FS \times EF \times ED \times CF}{BW \times AT}$$

| | | | |
|---|---|---|---|
| = | 9.3E-07 (Adolescent) | $Intake_{ing}(mg/kg{\cdot}d) = EPC_{soil} * IF * B$ | |
| | | (B) presented in Table 5.1 | |
| | | Non-cancer Hazard = Intake/RfD | |

| | | |
|---|---|---|
| IR | Ingestion Rate (mg/day) | 100 |
| FS | Fraction from Contaminated Source | 1 |
| EF | Soil Ingestion Exposure Frequency (days/year) | 150 |
| ED | Soil Ingestion Exposure Duration (years) | 10 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 44 |
| AT | Averaging Time (days) | 3,650 |

**Dermal - Soil**

$$\text{Intake Factor (IF)} = \frac{SA \times AF \times EF \times ED \times CF}{BW \times AT}$$

| | | | |
|---|---|---|---|
| = | 3.0E-06 (Adolescent) | $Intake_{derm}(mg/kg{\cdot}d) = EPC_{soil} * IF * ABS$ | |
| | | (ABS) presented in Table 5.1 | |
| | | Non-cancer Hazard = Intake/RfD | |

| | | |
|---|---|---|
| SA | Surface Area Exposed to Soil ($cm^2$/day) | 4,639 |
| AF | Soil Skin Adherence Factor ($mg/cm^2$) | 0.07 |
| EF | Soil Dermal Exposure Frequency (days/year) | 150 |
| ED | Soil Dermal Exposure Duration (years) | 10 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 44 |
| AT | Averaging Time (days) | 3,650 |

**Inhalation - Soil**

$$\text{Intake Factor (IF)} = \frac{EF \times ED \times ET \times CF}{AT}$$

| | | | |
|---|---|---|---|
| = | 1.4E-01 (Adolescent) | $EPC_{air} = EPC_{soil}$ x [1/Volatilization Factor (VF) + 1/Particulate Emissions Factor (PEF)] | |
| | | Exposure = $EPC_{air}$ x IF | |
| | | Non-cancer Hazard = Exposure/RfC | |

| | | |
|---|---|---|
| EF | Soil Exposure Frequency (days/year) | 150 |
| ED | Soil Exposure Duration (years) | 10 |
| ET | Soil Exposure Time (hours/day) | 8 |
| CF | Conversion Factor (days/hours) | 0.042 |
| AT | Averaging Time (days) | 3,650 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC Value | EPC Units | Non-cancer Hazard Calculations: Intake/Exposure Value | Intake/Exposure Units | RfD/RfC Value | RfD/RfC Units | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|

**Ingestion - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{IR \times FS \times EF \times ED \times CF}{BW \times AT}$$

= 2.7E-07 (Adolescent)

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{sediment} * IF * B$

(B) presented in Table 5.1

Non-cancer Hazard = Intake/RfD

| | | |
|---|---|---|
| IR | Ingestion Rate (mg/day) | 100 |
| FS | Fraction from Contaminated Source | 1 |
| EF | Sediment Ingestion Exposure Frequency (days/year) | 44 |
| ED | Sediment Ingestion Exposure Duration (years) | 10 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 44 |
| AT | Averaging Time (days) | 3,650 |

**Dermal - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{SA \times AF \times EF \times ED \times CF}{BW \times AT}$$

= 2.5E-06 (Adolescent)

$Intake_{derm}(mg/kg{\cdot}d) = EPC_{sediment} * IF * ABS$

(ABS) presented in Table 5.1

Non-cancer Hazard = Intake/RfD

| | | |
|---|---|---|
| SA | Surface Area Exposed to Sediment ($cm^2$/day) | 4,639 |
| AF | Sediment Skin Adherence Factor ($mg/cm^2$) | 0.2 |
| EF | Sediment Dermal Exposure Frequency (days/year) | 44 |
| ED | Sediment Dermal Exposure Duration (years) | 10 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 44 |
| AT | Averaging Time (days) | 3,650 |

**Dermal - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{SA \times EV \times EF \times ED}{BW \times AT}$$

= 1.3E+01 (Adolescent)

$Intake_{derm}(mg/kg{\cdot}d) = IF \times Absorbed\ Dose\ per\ Event\ (DA_{Event})$

($DA_{event}$) presented in Table 4.6

Non-cancer Hazard = Intake/RfD

| | | |
|---|---|---|
| SA | Surface Area Exposed to Surface Water ($cm^2$) | 4,639 |
| EF | Surface Water Dermal Exposure Frequency (days/year) | 44 |
| ED | Surface Water Dermal Exposure Duration (years) | 10 |
| EV | Events per Day (events/day) | 1 |
| BW | Body Weight (kg) | 44 |
| AT | Averaging Time (days) | 3,650 |

**Table 7.12**
**Calculation of Chemical Non-cancer Hazards for Recreator**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.0E+03 | mg/kg | 4.8E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 4.8E-03 |
| | | | Ingestion | ANTIMONY | 2.3E+00 | mg/kg | 3.6E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 9.1E-03 |
| | | | Ingestion | ARSENIC | 9.8E+00 | mg/kg | 9.5E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.2E-02 |
| | | | Ingestion | CHROMIUM | 1.6E+01 | mg/kg | 2.6E-05 | mg/kg-d | 3.0E-03 | mg/kg-d | 8.6E-03 |
| | | | Ingestion | COBALT | 6.2E+00 | mg/kg | 9.9E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.3E-02 |
| | | | Ingestion | COPPER | 1.0E+02 | mg/kg | 1.6E-04 | mg/kg-d | 4.0E-02 | mg/kg-d | 4.1E-03 |
| | | | Ingestion | CYANIDE | 2.7E+00 | mg/kg | 4.3E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 7.2E-03 |
| | | | Ingestion | IRON | 8.0E+03 | mg/kg | 1.3E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.8E-02 |
| | | | Ingestion | LEAD | 1.7E+02 | mg/kg | 2.7E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 1.8E-04 | mg/kg-d | 2.4E-02 | mg/kg-d | 7.3E-03 |
| | | | Ingestion | THALLIUM | 8.6E-01 | mg/kg | 1.4E-06 | mg/kg-d | 1.0E-05 | mg/kg-d | 1.4E-01 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 6.5E-02 | mg/kg | 1.0E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 5.2E-03 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 3.2E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 2.4E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.8E-02 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 4.7E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 1.0E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | CHRYSENE | 3.0E+01 | mg/kg | 4.8E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 2.4E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 6.5E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | **TICs** | | | | | | | |
| | | | Ingestion | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 1.9E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **3.5E-01** |
| Sediment | Sediment | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.0E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 2.3E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 9.8E+00 | mg/kg | 1.1E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.8E-03 |
| | | | Dermal | CHROMIUM | 1.6E+01 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 6.2E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.0E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 2.7E+00 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 8.0E+03 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.7E+02 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 8.6E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 6.5E-02 | mg/kg | 3.5E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.7E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 9.8E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 7.3E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.4E-02 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 1.5E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 3.1E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | CHRYSENE | 3.0E+01 | mg/kg | 1.5E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 7.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 2.0E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | **TICs** | | | | | | | |
| | | | Dermal | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 6.0E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **3.0E-02** |
| Surface Water | Surface Water | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ARSENIC | 7.8E-03 | mg/L | 1.5E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.0E-04 |
| | | | Dermal | CHROMIUM | 2.6E-03 | mg/L | 4.9E-08 | mg/kg-d | 7.5E-05 | mg/kg-d | 6.5E-04 |
| | | | Dermal | COBALT | 2.1E-03 | mg/L | 1.6E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.4E-05 |
| | | | Dermal | CYANIDE | 4.4E-03 | mg/L | 8.5E-08 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.4E-04 |
| | | | Dermal | IRON | 1.1E+01 | mg/L | 2.2E-04 | mg/kg-d | 7.0E-01 | mg/kg-d | 3.1E-04 |
| | | | Dermal | MANGANESE | 9.5E-01 | mg/L | 1.8E-05 | mg/kg-d | 9.6E-04 | mg/kg-d | 1.9E-02 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 2.8E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 2.0E-04 | mg/L | 1.3E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.2E-02 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 4.9E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 3.5E-04 | mg/kg-d | 2.0E-02 | mg/kg-d | 1.7E-02 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 4.1E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 6.7E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **8.0E-02** |
| **Exposure Point Total (SL)** | | | | | | | | | | | **5E-01** |
| Soil | Soil (0-2 ft bgs) | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.8E+03 | mg/kg | 2.1E-02 | mg/kg-d | 1.0E+00 | mg/kg-d | 2.1E-02 |
| | | | Ingestion | ANTIMONY | 1.4E+00 | mg/kg | 7.8E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 1.9E-02 |
| | | | Ingestion | ARSENIC | 1.1E+02 | mg/kg | 3.8E-04 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.3E+00 |
| | | | Ingestion | CADMIUM | 2.3E+00 | mg/kg | 1.3E-05 | mg/kg-d | 1.0E-03 | mg/kg-d | 1.3E-02 |
| | | | Ingestion | CHROMIUM | 4.0E+01 | mg/kg | 2.2E-04 | mg/kg-d | 3.0E-03 | mg/kg-d | 7.4E-02 |
| | | | Ingestion | COBALT | 1.1E+00 | mg/kg | 6.0E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.0E-02 |
| | | | Ingestion | CYANIDE | 6.0E-01 | mg/kg | 3.3E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 5.5E-03 |
| | | | Ingestion | IRON | 6.3E+03 | mg/kg | 3.4E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 4.9E-02 |
| | | | Ingestion | LEAD | 1.9E+02 | mg/kg | 1.0E-03 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | THALLIUM | 8.5E-01 | mg/kg | 4.7E-06 | mg/kg-d | 1.0E-05 | mg/kg-d | 4.7E-01 |
| | | | Ingestion | VANADIUM | 1.2E+01 | mg/kg | 6.8E-05 | mg/kg-d | 5.0E-03 | mg/kg-d | 1.4E-02 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | BWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E-01 | mg/kg | 7.4E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.5E-03 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **1.9E+00** |
| Soil | Soil (0-2 ft bgs) | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.8E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 1.4E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 1.1E+02 | mg/kg | 4.5E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.5E-01 |
| | | | Dermal | CADMIUM | 2.3E+00 | mg/kg | 3.0E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 1.2E-03 |
| | | | Dermal | CHROMIUM | 4.0E+01 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 1.1E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 6.0E-01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 6.3E+03 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.9E+02 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 8.5E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 1.2E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 1.4E-01 | mg/kg | 2.3E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.6E-04 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **1.5E-01** |
| Soil | Particulates in Air | BWL | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 1.2E-06 | mg/m3 | 1.6E-07 | mg/m3 | 5.0E-03 | mg/m3 | 3.2E-05 |
| | | | Inhalation | ANTIMONY | 4.4E-10 | mg/m3 | 6.0E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | ARSENIC | 3.6E-08 | mg/m3 | 4.9E-09 | mg/m3 | 1.5E-05 | mg/m3 | 3.2E-04 |
| | | | Inhalation | CADMIUM | 7.1E-10 | mg/m3 | 9.7E-11 | mg/m3 | 1.0E-05 | mg/m3 | 9.7E-06 |
| | | | Inhalation | CHROMIUM | 1.2E-08 | mg/m3 | 1.7E-09 | mg/m3 | 1.0E-04 | mg/m3 | 1.7E-05 |
| | | | Inhalation | COBALT | 3.4E-10 | mg/m3 | 4.6E-11 | mg/m3 | 6.0E-06 | mg/m3 | 7.7E-06 |
| | | | Inhalation | CYANIDE | 7.9E-06 | mg/m3 | 1.1E-06 | mg/m3 | 8.0E-04 | mg/m3 | 1.4E-03 |
| | | | Inhalation | IRON | 1.9E-06 | mg/m3 | 2.7E-07 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | LEAD | 5.8E-08 | mg/m3 | 7.9E-09 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | THALLIUM | 2.6E-10 | mg/m3 | 3.6E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | VANADIUM | 3.9E-09 | mg/m3 | 5.3E-10 | mg/m3 | 1.0E-04 | mg/m3 | 5.3E-06 |
| | | | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)PYRENE | 4.2E-11 | mg/m3 | 5.7E-12 | mg/m3 | 2.0E-06 | mg/m3 | 2.9E-06 |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **1.8E-03** |
| Sediment | Sediment | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.5E+04 | mg/kg | 2.4E-02 | mg/kg-d | 1.0E+00 | mg/kg-d | 2.4E-02 |
| | | | Ingestion | ANTIMONY | 7.3E+00 | mg/kg | 1.2E-05 | mg/kg-d | 4.0E-04 | mg/kg-d | 2.9E-02 |
| | | | Ingestion | ARSENIC | 2.8E+02 | mg/kg | 2.7E-04 | mg/kg-d | 3.0E-04 | mg/kg-d | 9.1E-01 |
| | | | Ingestion | CADMIUM | 1.3E+01 | mg/kg | 2.1E-05 | mg/kg-d | 1.0E-03 | mg/kg-d | 2.1E-02 |
| | | | Ingestion | CHROMIUM | 1.6E+02 | mg/kg | 2.5E-04 | mg/kg-d | 3.0E-03 | mg/kg-d | 8.3E-02 |

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|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Ingestion | COBALT | 1.7E+01 | mg/kg | 2.7E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 9.0E-02 |
| | | | Ingestion | COPPER | 1.8E+02 | mg/kg | 2.8E-04 | mg/kg-d | 4.0E-02 | mg/kg-d | 7.1E-03 |
| | | | Ingestion | CYANIDE | 1.5E+01 | mg/kg | 2.4E-05 | mg/kg-d | 6.0E-04 | mg/kg-d | 4.1E-02 |
| | | | Ingestion | IRON | 4.2E+04 | mg/kg | 6.8E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 9.7E-02 |
| | | | Ingestion | LEAD | 1.5E+03 | mg/kg | 2.4E-03 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 1.8E-04 | mg/kg-d | 2.4E-02 | mg/kg-d | 7.3E-03 |
| | | | Ingestion | VANADIUM | 5.6E+01 | mg/kg | 9.0E-05 | mg/kg-d | 5.0E-03 | mg/kg-d | 1.8E-02 |
| | | | Ingestion | ZINC | 1.1E+03 | mg/kg | 1.8E-03 | mg/kg-d | 3.0E-01 | mg/kg-d | 6.0E-03 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 8.0E-02 | mg/kg | 1.3E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 6.4E-03 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 2.2E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 2.2E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.3E-03 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 3.3E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 3.1E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 4.6E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 1.2E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | NAPHTHALENE | 2.8E+00 | mg/kg | 4.6E-06 | mg/kg-d | 2.0E-02 | mg/kg-d | 2.3E-04 |
| | | | Ingestion | **VOCs** | | | | | | | |
| | | | Ingestion | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | 1.1E-07 | mg/kg-d | 5.0E-04 | mg/kg-d | 2.1E-04 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **1.3E+00** |
| Sediment | Sediment | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.5E+04 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 7.3E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 2.8E+02 | mg/kg | 3.2E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.1E-01 |
| | | | Dermal | CADMIUM | 1.3E+01 | mg/kg | 5.1E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 2.0E-03 |
| | | | Dermal | CHROMIUM | 1.6E+02 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 1.7E+01 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.8E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 1.5E+01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 4.2E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.5E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 5.6E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | ZINC | 1.1E+03 | mg/kg | NA | mg/kg-d | 3.0E-01 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 8.0E-02 | mg/kg | 4.3E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 2.1E-03 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 6.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 6.8E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.3E-03 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 1.0E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 9.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 1.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 3.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | NAPHTHALENE | 2.8E+00 | mg/kg | 1.4E-06 | mg/kg-d | 2.0E-02 | mg/kg-d | 7.1E-05 |
| | | | Dermal | **VOCs** | | | | | | | |
| | | | Dermal | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | NA | mg/kg-d | 5.0E-04 | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **1.1E-01** |
| Surface Water | Surface Water | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.3E+00 | mg/L | 2.5E-05 | mg/kg-d | 1.0E+00 | mg/kg-d | 2.5E-05 |
| | | | Dermal | ANTIMONY | 1.2E-03 | mg/L | 2.2E-08 | mg/kg-d | 6.0E-05 | mg/kg-d | 3.7E-04 |
| | | | Dermal | ARSENIC | 3.1E-02 | mg/L | 5.8E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.9E-03 |
| | | | Dermal | CADMIUM | 6.2E-04 | mg/L | 1.2E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 4.7E-04 |
| | | | Dermal | CHROMIUM | 4.5E-03 | mg/L | 8.5E-08 | mg/kg-d | 7.5E-05 | mg/kg-d | 1.1E-03 |
| | | | Dermal | COBALT | 1.0E-03 | mg/L | 7.7E-09 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.6E-05 |
| | | | Dermal | CYANIDE | 2.0E-03 | mg/L | 3.8E-08 | mg/kg-d | 6.0E-04 | mg/kg-d | 6.4E-05 |
| | | | Dermal | IRON | 6.5E+00 | mg/L | 1.2E-04 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.8E-04 |
| | | | Dermal | LEAD | 2.6E-02 | mg/L | 4.9E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 7.0E-02 | mg/L | 1.3E-06 | mg/kg-d | 9.6E-04 | mg/kg-d | 1.4E-03 |
| | | | Dermal | THALLIUM | 1.2E-03 | mg/L | 2.4E-08 | mg/kg-d | 1.0E-05 | mg/kg-d | 2.4E-03 |
| | | | Dermal | VANADIUM | 2.5E-03 | mg/L | 4.7E-08 | mg/kg-d | 1.3E-04 | mg/kg-d | 3.6E-04 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 3.4E-05 | mg/L | 2.1E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.1E-03 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1.5E-02** |
| **Exposure Point Total (BWL)** | | | | | | | | | | | **4E+00** |
| Soil | Soil (0-2 ft bgs) | HC | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 9.2E+03 | mg/kg | 5.0E-02 | mg/kg-d | 1.0E+00 | mg/kg-d | 5.0E-02 |
| | | | Ingestion | ANTIMONY | 5.3E+00 | mg/kg | 2.9E-05 | mg/kg-d | 4.0E-04 | mg/kg-d | 7.3E-02 |
| | | | Ingestion | ARSENIC | 5.0E+02 | mg/kg | 1.6E-03 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.4E+00 |
| | | | Ingestion | BARIUM | 1.9E+03 | mg/kg | 1.1E-02 | mg/kg-d | 2.0E-01 | mg/kg-d | 5.3E-02 |
| | | | Ingestion | CADMIUM | 2.9E+00 | mg/kg | 1.6E-05 | mg/kg-d | 1.0E-03 | mg/kg-d | 1.6E-02 |
| | | | Ingestion | CHROMIUM | 6.4E+02 | mg/kg | 3.5E-03 | mg/kg-d | 3.0E-03 | mg/kg-d | 1.2E+00 |
| | | | Ingestion | COBALT | 6.3E+00 | mg/kg | 3.5E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.2E-01 |
| | | | Ingestion | COPPER | 1.4E+02 | mg/kg | 7.8E-04 | mg/kg-d | 4.0E-02 | mg/kg-d | 2.0E-02 |
| | | | Ingestion | CYANIDE | 4.9E+01 | mg/kg | 2.7E-04 | mg/kg-d | 6.0E-04 | mg/kg-d | 4.5E-01 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | HC | Ingestion | IRON | 2.8E+04 | mg/kg | 1.5E-01 | mg/kg-d | 7.0E-01 | mg/kg-d | 2.2E-01 |
| | | | Ingestion | LEAD | 3.3E+03 | mg/kg | 1.8E-02 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 3.4E+02 | mg/kg | 1.9E-03 | mg/kg-d | 2.4E-02 | mg/kg-d | 7.7E-02 |
| | | | Ingestion | MERCURY | 7.7E-01 | mg/kg | 4.2E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.4E-02 |
| | | | Ingestion | NICKEL | 1.4E+01 | mg/kg | 7.5E-05 | mg/kg-d | 2.0E-02 | mg/kg-d | 3.7E-03 |
| | | | Ingestion | THALLIUM | 6.6E-01 | mg/kg | 3.6E-06 | mg/kg-d | 1.0E-05 | mg/kg-d | 3.6E-01 |
| | | | Ingestion | VANADIUM | 3.0E+01 | mg/kg | 1.7E-04 | mg/kg-d | 5.0E-03 | mg/kg-d | 3.3E-02 |
| | | | Ingestion | ZINC | 5.3E+02 | mg/kg | 2.9E-03 | mg/kg-d | 3.0E-01 | mg/kg-d | 9.7E-03 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 5.5E-02 | mg/kg | 3.0E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.5E-02 |
| | | | Ingestion | AROCLOR-1260 | 1.7E-01 | mg/kg | 9.0E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 4.5E-02 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.6E+00 | mg/kg | 8.7E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.8E+00 | mg/kg | 9.6E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.2E-02 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 1.1E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.8E+00 | mg/kg | 1.0E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 3.0E-01 | mg/kg | 1.6E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.7E-01 | mg/kg | 4.2E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | NAPHTHALENE | 2.7E-01 | mg/kg | 1.5E-06 | mg/kg-d | 2.0E-02 | mg/kg-d | 7.3E-05 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **8.2E+00** |
| Soil | Soil (0-2 ft bgs) | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 9.2E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 5.3E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 5.0E+02 | mg/kg | 1.9E-04 | mg/kg-d | 3.0E-04 | mg/kg-d | 6.5E-01 |
| | | | Dermal | BARIUM | 1.9E+03 | mg/kg | NA | mg/kg-d | 1.4E-02 | mg/kg-d | NA |
| | | | Dermal | CADMIUM | 2.9E+00 | mg/kg | 3.8E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 1.5E-03 |
| | | | Dermal | CHROMIUM | 6.4E+02 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 6.3E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.4E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 4.9E+01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 2.8E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 3.3E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 3.4E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | MERCURY | 7.7E-01 | mg/kg | NA | mg/kg-d | 2.1E-05 | mg/kg-d | NA |
| | | | Dermal | NICKEL | 1.4E+01 | mg/kg | NA | mg/kg-d | 8.0E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 6.6E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 3.0E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | ZINC | 5.3E+02 | mg/kg | NA | mg/kg-d | 3.0E-01 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 5.5E-02 | mg/kg | 1.0E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 5.0E-03 |
| | | | Dermal | AROCLOR-1260 | 1.7E-01 | mg/kg | 3.0E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.5E-02 |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | HC | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.6E+00 | mg/kg | 2.7E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.8E+00 | mg/kg | 3.0E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 9.9E-03 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 3.4E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.8E+00 | mg/kg | 3.1E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 3.0E-01 | mg/kg | 5.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.7E-01 | mg/kg | 1.3E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | NAPHTHALENE | 2.7E-01 | mg/kg | 4.5E-07 | mg/kg-d | 2.0E-02 | mg/kg-d | 2.2E-05 |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **6.8E-01** |
| Soil | Particulates in Air | HC | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 2.8E-06 | mg/m3 | 3.9E-07 | mg/m3 | 5.0E-03 | mg/m3 | 7.8E-05 |
| | | | Inhalation | ANTIMONY | 1.6E-09 | mg/m3 | 2.3E-10 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | ARSENIC | 1.5E-07 | mg/m3 | 2.1E-08 | mg/m3 | 1.5E-05 | mg/m3 | 1.4E-03 |
| | | | Inhalation | BARIUM | 6.0E-07 | mg/m3 | 8.2E-08 | mg/m3 | 5.0E-04 | mg/m3 | 1.6E-04 |
| | | | Inhalation | CADMIUM | 9.0E-10 | mg/m3 | 1.2E-10 | mg/m3 | 1.0E-05 | mg/m3 | 1.2E-05 |
| | | | Inhalation | CHROMIUM | 2.0E-07 | mg/m3 | 2.7E-08 | mg/m3 | 1.0E-04 | mg/m3 | 2.7E-04 |
| | | | Inhalation | COBALT | 1.9E-09 | mg/m3 | 2.7E-10 | mg/m3 | 6.0E-06 | mg/m3 | 4.4E-05 |
| | | | Inhalation | COPPER | 4.4E-08 | mg/m3 | 6.0E-09 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | CYANIDE | 6.5E-04 | mg/m3 | 8.9E-05 | mg/m3 | 8.0E-04 | mg/m3 | 1.1E-01 |
| | | | Inhalation | IRON | 8.5E-06 | mg/m3 | 1.2E-06 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | LEAD | 1.0E-06 | mg/m3 | 1.4E-07 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | MANGANESE | 1.0E-07 | mg/m3 | 1.4E-08 | mg/m3 | 5.0E-05 | mg/m3 | 2.9E-04 |
| | | | Inhalation | MERCURY | 2.4E-10 | mg/m3 | 3.3E-11 | mg/m3 | 3.0E-04 | mg/m3 | 1.1E-07 |
| | | | Inhalation | NICKEL | 4.2E-09 | mg/m3 | 5.8E-10 | mg/m3 | 9.0E-05 | mg/m3 | 6.4E-06 |
| | | | Inhalation | THALLIUM | 2.0E-10 | mg/m3 | 2.8E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | VANADIUM | 9.4E-09 | mg/m3 | 1.3E-09 | mg/m3 | 1.0E-04 | mg/m3 | 1.3E-05 |
| | | | Inhalation | ZINC | 1.6E-07 | mg/m3 | 2.3E-08 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | **PEST/PCB** | | | | | | | |
| | | | Inhalation | AROCLOR-1254 | 5.1E-08 | mg/m3 | 7.0E-09 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | AROCLOR-1260 | 9.8E-08 | mg/m3 | 1.3E-08 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)ANTHRACENE | 2.8E-07 | mg/m3 | 3.9E-08 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | BENZO(A)PYRENE | 5.4E-10 | mg/m3 | 7.4E-11 | mg/m3 | 2.0E-06 | mg/m3 | 3.7E-05 |
| | | | Inhalation | BENZO(B)FLUORANTHENE | 6.2E-10 | mg/m3 | 8.5E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | BENZO(K)FLUORANTHENE | 5.7E-10 | mg/m3 | 7.8E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | DIBENZO(A,H)ANTHRACENE | 9.2E-11 | mg/m3 | 1.3E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | INDENO(1,2,3-CD)PYRENE | 2.4E-10 | mg/m3 | 3.3E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | NAPHTHALENE | 4.5E-06 | mg/m3 | 6.1E-07 | mg/m3 | 3.0E-03 | mg/m3 | 2.0E-04 |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **1.1E-01** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | HC | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 8.3E+03 | mg/kg | 1.3E-02 | mg/kg-d | 1.0E+00 | mg/kg-d | 1.3E-02 |
| | | | Ingestion | ANTIMONY | 2.5E+00 | mg/kg | 3.9E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 9.9E-03 |
| | | | Ingestion | ARSENIC | 3.9E+02 | mg/kg | 3.7E-04 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.2E+00 |
| | | | Ingestion | BARIUM | 1.0E+03 | mg/kg | 1.6E-03 | mg/kg-d | 2.0E-01 | mg/kg-d | 8.1E-03 |
| | | | Ingestion | CADMIUM | 4.5E+00 | mg/kg | 7.3E-06 | mg/kg-d | 1.0E-03 | mg/kg-d | 7.3E-03 |
| | | | Ingestion | CHROMIUM | 4.4E+02 | mg/kg | 7.1E-04 | mg/kg-d | 3.0E-03 | mg/kg-d | 2.4E-01 |
| | | | Ingestion | COBALT | 5.0E+00 | mg/kg | 8.0E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.7E-02 |
| | | | Ingestion | COPPER | 1.7E+02 | mg/kg | 2.7E-04 | mg/kg-d | 4.0E-02 | mg/kg-d | 6.8E-03 |
| | | | Ingestion | CYANIDE | 4.8E+01 | mg/kg | 7.7E-05 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.3E-01 |
| | | | Ingestion | IRON | 1.7E+04 | mg/kg | 2.8E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 3.9E-02 |
| | | | Ingestion | LEAD | 2.9E+03 | mg/kg | 4.6E-03 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 8.1E+01 | mg/kg | 1.3E-04 | mg/kg-d | 2.4E-02 | mg/kg-d | 5.5E-03 |
| | | | Ingestion | NICKEL | 3.3E+01 | mg/kg | 5.4E-05 | mg/kg-d | 2.0E-02 | mg/kg-d | 2.7E-03 |
| | | | Ingestion | THALLIUM | 1.6E+00 | mg/kg | 2.6E-06 | mg/kg-d | 1.0E-05 | mg/kg-d | 2.6E-01 |
| | | | Ingestion | VANADIUM | 2.4E+01 | mg/kg | 3.9E-05 | mg/kg-d | 5.0E-03 | mg/kg-d | 7.8E-03 |
| | | | Ingestion | ZINC | 4.9E+02 | mg/kg | 7.8E-04 | mg/kg-d | 3.0E-01 | mg/kg-d | 2.6E-03 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.4E-01 | mg/kg | 2.2E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.1E-02 |
| | | | Ingestion | AROCLOR-1260 | 5.8E-02 | mg/kg | 9.3E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 4.6E-03 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 7.1E-01 | mg/kg | 1.1E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 7.0E-01 | mg/kg | 1.1E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.7E-03 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 9.5E-01 | mg/kg | 1.5E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.9E-01 | mg/kg | 3.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 3.9E-01 | mg/kg | 6.2E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **2.0E+00** |
| Sediment | Sediment | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 8.3E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 2.5E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 3.9E+02 | mg/kg | 4.4E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.5E-01 |
| | | | Dermal | BARIUM | 1.0E+03 | mg/kg | NA | mg/kg-d | 1.4E-02 | mg/kg-d | NA |
| | | | Dermal | CADMIUM | 4.5E+00 | mg/kg | 1.7E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 6.9E-04 |
| | | | Dermal | CHROMIUM | 4.4E+02 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 5.0E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.7E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 4.8E+01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 1.7E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 2.9E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 8.1E+01 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | NICKEL | 3.3E+01 | mg/kg | NA | mg/kg-d | 8.0E-04 | mg/kg-d | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | HC | Dermal | THALLIUM | 1.6E+00 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 2.4E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | ZINC | 4.9E+02 | mg/kg | NA | mg/kg-d | 3.0E-01 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.4E-01 | mg/kg | 7.2E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 3.6E-03 |
| | | | Dermal | AROCLOR-1260 | 5.8E-02 | mg/kg | 3.1E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.5E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 7.1E-01 | mg/kg | 3.5E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 7.0E-01 | mg/kg | 3.5E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.2E-03 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 9.5E-01 | mg/kg | 4.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.9E-01 | mg/kg | 9.4E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 3.9E-01 | mg/kg | 1.9E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **1.5E-01** |
| Surface Water | Surface Water | HC | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 6.2E+00 | mg/L | 1.2E-04 | mg/kg-d | 1.0E+00 | mg/kg-d | 1.2E-04 |
| | | | Dermal | ANTIMONY | 3.4E-03 | mg/L | 6.4E-08 | mg/kg-d | 6.0E-05 | mg/kg-d | 1.1E-03 |
| | | | Dermal | ARSENIC | 1.1E-01 | mg/L | 2.1E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 6.9E-03 |
| | | | Dermal | BARIUM | 4.5E-01 | mg/L | 8.7E-06 | mg/kg-d | 1.4E-02 | mg/kg-d | 6.2E-04 |
| | | | Dermal | CADMIUM | 2.5E-03 | mg/L | 4.7E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 1.9E-03 |
| | | | Dermal | CHROMIUM | 1.2E-01 | mg/L | 2.2E-06 | mg/kg-d | 7.5E-05 | mg/kg-d | 3.0E-02 |
| | | | Dermal | COBALT | 2.7E-03 | mg/L | 2.1E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 6.9E-05 |
| | | | Dermal | COPPER | 2.8E-02 | mg/L | 5.4E-07 | mg/kg-d | 4.0E-02 | mg/kg-d | 1.3E-05 |
| | | | Dermal | CYANIDE | 8.6E-03 | mg/L | 1.6E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 2.7E-04 |
| | | | Dermal | IRON | 1.4E+01 | mg/L | 2.6E-04 | mg/kg-d | 7.0E-01 | mg/kg-d | 3.7E-04 |
| | | | Dermal | LEAD | 2.4E-01 | mg/L | 4.5E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.6E-01 | mg/L | 3.1E-06 | mg/kg-d | 9.6E-04 | mg/kg-d | 3.2E-03 |
| | | | Dermal | MERCURY | 2.0E-04 | mg/L | 3.9E-09 | mg/kg-d | 2.1E-05 | mg/kg-d | 1.8E-04 |
| | | | Dermal | THALLIUM | 5.4E-03 | mg/L | 1.0E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 1.0E-02 |
| | | | Dermal | VANADIUM | 5.1E-03 | mg/L | 9.7E-08 | mg/kg-d | 1.3E-04 | mg/kg-d | 7.5E-04 |
| | | | Dermal | ZINC | 4.8E-01 | mg/L | 5.5E-06 | mg/kg-d | 3.0E-01 | mg/kg-d | 1.8E-05 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **5.6E-02** |
| **Exposure Point Total (HC)** | | | | | | | | | | | **1E+01** |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Soil (0-2 ft bgs) | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 4.6E+03 | mg/kg | 2.5E-02 | mg/kg-d | 1.0E+00 | mg/kg-d | 2.5E-02 |
| | | | Ingestion | ANTIMONY | 3.6E+00 | mg/kg | 2.0E-05 | mg/kg-d | 4.0E-04 | mg/kg-d | 5.0E-02 |
| | | | Ingestion | ARSENIC | 8.4E+00 | mg/kg | 2.8E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 9.2E-02 |
| | | | Ingestion | CHROMIUM | 1.8E+01 | mg/kg | 1.0E-04 | mg/kg-d | 3.0E-03 | mg/kg-d | 3.4E-02 |
| | | | Ingestion | COBALT | 8.7E-01 | mg/kg | 4.8E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.6E-02 |
| | | | Ingestion | CYANIDE | 3.7E-01 | mg/kg | 2.0E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 3.4E-03 |
| | | | Ingestion | IRON | 7.8E+03 | mg/kg | 4.3E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 6.1E-02 |
| | | | Ingestion | LEAD | 2.1E+02 | mg/kg | 1.2E-03 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | THALLIUM | 4.4E-01 | mg/kg | 2.4E-06 | mg/kg-d | 1.0E-05 | mg/kg-d | 2.4E-01 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 1.3E-01 | mg/kg | 7.0E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.3E-03 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.6E-01 | mg/kg | 1.4E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Ingestion]** | | | | | | | | **5.2E-01** |
| Soil | Soil (0-2 ft bgs) | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 4.6E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 3.6E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 8.4E+00 | mg/kg | 3.3E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.1E-02 |
| | | | Dermal | CHROMIUM | 1.8E+01 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 8.7E-01 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 3.7E-01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 7.8E+03 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 2.1E+02 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 4.4E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 1.3E-01 | mg/kg | 2.1E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.2E-04 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.6E-01 | mg/kg | 4.3E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Soil (0-2 ft bgs)-Dermal]** | | | | | | | | **1.2E-02** |
| Soil | Particulates in Air | KWL | Inhalation | **Metals** | | | | | | | |
| | | | Inhalation | ALUMINUM | 1.4E-06 | mg/m3 | 1.9E-07 | mg/m3 | 5.0E-03 | mg/m3 | 3.9E-05 |
| | | | Inhalation | ANTIMONY | 1.1E-09 | mg/m3 | 1.5E-10 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | ARSENIC | 2.6E-09 | mg/m3 | 3.6E-10 | mg/m3 | 1.5E-05 | mg/m3 | 2.4E-05 |
| | | | Inhalation | CHROMIUM | 5.7E-09 | mg/m3 | 7.8E-10 | mg/m3 | 1.0E-04 | mg/m3 | 7.8E-06 |
| | | | Inhalation | COBALT | 2.7E-10 | mg/m3 | 3.7E-11 | mg/m3 | 6.0E-06 | mg/m3 | 6.1E-06 |
| | | | Inhalation | CYANIDE | 4.9E-06 | mg/m3 | 6.7E-07 | mg/m3 | 8.0E-04 | mg/m3 | 8.4E-04 |
| | | | Inhalation | IRON | 2.4E-06 | mg/m3 | 3.3E-07 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | LEAD | 6.6E-08 | mg/m3 | 9.0E-09 | mg/m3 | NA | mg/m3 | NA |
| | | | Inhalation | THALLIUM | 1.4E-10 | mg/m3 | 1.9E-11 | mg/m3 | NA | mg/m3 | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Soil | Particulates in Air | KWL | Inhalation | **SVOCs** | | | | | | | |
| | | | Inhalation | BENZO(A)PYRENE | 3.9E-11 | mg/m3 | 5.4E-12 | mg/m3 | 2.0E-06 | mg/m3 | 2.7E-06 |
| | | | Inhalation | BENZO(B)FLUORANTHENE | 7.9E-11 | mg/m3 | 1.1E-11 | mg/m3 | NA | mg/m3 | NA |
| | | | **Exposure Route Total [Particulates in Air (soil 0-2)-Inhalation]** | | | | | | | | **9.2E-04** |
| Sediment | Sediment | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.6E+04 | mg/kg | 2.6E-02 | mg/kg-d | 1.0E+00 | mg/kg-d | 2.6E-02 |
| | | | Ingestion | ANTIMONY | 2.0E+00 | mg/kg | 3.3E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 8.2E-03 |
| | | | Ingestion | ARSENIC | 8.8E+01 | mg/kg | 8.5E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.8E-01 |
| | | | Ingestion | CADMIUM | 7.7E+00 | mg/kg | 1.2E-05 | mg/kg-d | 1.0E-03 | mg/kg-d | 1.2E-02 |
| | | | Ingestion | CHROMIUM | 1.7E+02 | mg/kg | 2.8E-04 | mg/kg-d | 3.0E-03 | mg/kg-d | 9.2E-02 |
| | | | Ingestion | COBALT | 8.6E+00 | mg/kg | 1.4E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.6E-02 |
| | | | Ingestion | COPPER | 2.1E+02 | mg/kg | 3.4E-04 | mg/kg-d | 4.0E-02 | mg/kg-d | 8.4E-03 |
| | | | Ingestion | CYANIDE | 4.1E+00 | mg/kg | 6.6E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.1E-02 |
| | | | Ingestion | IRON | 2.7E+04 | mg/kg | 4.3E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 6.1E-02 |
| | | | Ingestion | LEAD | 1.0E+03 | mg/kg | 1.6E-03 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.4E+02 | mg/kg | 2.3E-04 | mg/kg-d | 2.4E-02 | mg/kg-d | 9.5E-03 |
| | | | Ingestion | NICKEL | 3.7E+01 | mg/kg | 5.9E-05 | mg/kg-d | 2.0E-02 | mg/kg-d | 2.9E-03 |
| | | | Ingestion | THALLIUM | 4.7E-01 | mg/kg | 7.5E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 7.5E-02 |
| | | | Ingestion | VANADIUM | 2.6E+01 | mg/kg | 4.2E-05 | mg/kg-d | 5.0E-03 | mg/kg-d | 8.4E-03 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.6E-01 | mg/kg | 2.6E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.3E-02 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 1.8E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 1.7E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.7E-03 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 2.2E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 1.9E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 2.6E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 6.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **6.6E-01** |
| Sediment | Sediment | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.6E+04 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 2.0E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 8.8E+01 | mg/kg | 1.0E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.4E-02 |
| | | | Dermal | CADMIUM | 7.7E+00 | mg/kg | 2.9E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 1.2E-03 |
| | | | Dermal | CHROMIUM | 1.7E+02 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 8.6E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 2.1E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 4.1E+00 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 2.7E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | KWL | Dermal | LEAD | 1.0E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.4E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | NICKEL | 3.7E+01 | mg/kg | NA | mg/kg-d | 8.0E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 4.7E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 2.6E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.6E-01 | mg/kg | 8.8E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 4.4E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 5.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 5.3E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.8E-03 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 6.9E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 6.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 8.1E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 2.1E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **4.1E-02** |
| Surface Water | Surface Water | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.4E+00 | mg/L | 2.6E-05 | mg/kg-d | 1.0E+00 | mg/kg-d | 2.6E-05 |
| | | | Dermal | ANTIMONY | 3.7E-03 | mg/L | 7.1E-08 | mg/kg-d | 6.0E-05 | mg/kg-d | 1.2E-03 |
| | | | Dermal | ARSENIC | 1.7E-02 | mg/L | 3.2E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.1E-03 |
| | | | Dermal | CHROMIUM | 5.3E-03 | mg/L | 1.0E-07 | mg/kg-d | 7.5E-05 | mg/kg-d | 1.4E-03 |
| | | | Dermal | COBALT | 1.6E-03 | mg/L | 1.2E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.1E-05 |
| | | | Dermal | CYANIDE | 1.8E-03 | mg/L | 3.4E-08 | mg/kg-d | 6.0E-04 | mg/kg-d | 5.7E-05 |
| | | | Dermal | IRON | 3.6E+00 | mg/L | 6.8E-05 | mg/kg-d | 7.0E-01 | mg/kg-d | 9.8E-05 |
| | | | Dermal | LEAD | 2.9E-02 | mg/L | 5.6E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 8.0E-02 | mg/L | 1.5E-06 | mg/kg-d | 9.6E-04 | mg/kg-d | 1.6E-03 |
| | | | Dermal | THALLIUM | 5.8E-03 | mg/L | 1.1E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 1.1E-02 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1.6E-02** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **1E+00** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |

**Ingestion - Soil**

$$\text{Intake Factor (IF)} = \frac{IR \times FS \times EF \times ED \times CF}{BW \times AT}$$

| | | | |
|---|---|---|---|
| = | 5.5E-06 | (Child) | |
| IR | Ingestion Rate (mg/day) | 200 | |
| FS | Fraction from Contaminated Source | 1 | |
| EF | Soil Ingestion Exposure Frequency (days/year) | 150 | |
| ED | Soil Ingestion Exposure Duration (years) | 6 | |
| CF | Conversion Factor (kg/mg) | 0.000001 | |
| BW | Body Weight (kg) | 15 | |
| AT | Averaging Time (days) | 2,190 | |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{soil} * IF * B$
(B) presented in Table 5.1
Non-cancer Hazard = Intake/RfD

**Dermal - Soil**

$$\text{Intake Factor (IF)} = \frac{SA \times AF \times EF \times ED \times CF}{BW \times AT}$$

| | | | |
|---|---|---|---|
| = | 1.3E-05 | (Child) | |
| SA | Surface Area Exposed to Soil ($cm^2$/day) | 2,373 | |
| AF | Soil Skin Adherence Factor ($mg/cm^2$) | 0.2 | |
| EF | Soil Dermal Exposure Frequency (days/year) | 150 | |
| ED | Soil Dermal Exposure Duration (years) | 6 | |
| CF | Conversion Factor (kg/mg) | 0.000001 | |
| BW | Body Weight (kg) | 15 | |
| AT | Averaging Time (days) | 2,190 | |

$Intake_{derm}(mg/kg{\cdot}d) = EPC_{soil} * IF * ABS$
(ABS) presented in Table 5.1
Non-cancer Hazard = Intake/RfD

**Inhalation - Soil**

$$\text{Intake Factor (IF)} = \frac{EF \times ED \times ET \times CF}{AT}$$

| | | | |
|---|---|---|---|
| = | 1.4E-01 | (Child) | |
| EF | Soil Exposure Frequency (days/year) | 150 | |
| ED | Soil Exposure Duration (years) | 6 | |
| ET | Soil Exposure Time (hours/day) | 8 | |
| CF | Conversion Factor (days/hours) | 0.042 | |
| AT | Averaging Time (days) | 2,190 | |

$EPC_{air} = EPC_{soil}$ x [1/Volatilization Factor (VF) + 1/Particulate Emissions Factor (PEF)]
Exposure = $EPC_{air}$ x IF
Non-cancer Hazard = Exposure/RfC

| | |
|---|---|
| Scenario Timeframe: | Current/Future |
| Receptor Population: | Recreator |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |

**Ingestion - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{IR \times FS \times EF \times ED \times CF}{BW \times AT}$$

| | | | |
|---|---|---|---|
| = | 1.6E-06 | (Child) | $Intake_{ing}(mg/kg{\cdot}d) = EPC_{sediment} * IF * B$ |
| IR | Ingestion Rate (mg/day) | 200 | (B) presented in Table 5.1 |
| FS | Fraction from Contaminated Source | 1 | Non-cancer Hazard = Intake/RfD |
| EF | Sediment Ingestion Exposure Frequency (days/year) | 44 | |
| ED | Sediment Ingestion Exposure Duration (years) | 6 | |
| CF | Conversion Factor (kg/mg) | 0.000001 | |
| BW | Body Weight (kg) | 15 | |
| AT | Averaging Time (days) | 2,190 | |

**Dermal - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{SA \times AF \times EF \times ED \times CF}{BW \times AT}$$

| | | | |
|---|---|---|---|
| = | 3.8E-06 | (Child) | $Intake_{derm}(mg/kg{\cdot}d) = EPC_{sediment} * IF * ABS$ |
| SA | Surface Area Exposed to Sediment ($cm^2$/day) | 2,373 | (ABS) presented in Table 5.1 |
| AF | Sediment Skin Adherence Factor ($mg/cm^2$) | 0.2 | Non-cancer Hazard = Intake/RfD |
| EF | Sediment Dermal Exposure Frequency (days/year) | 44 | |
| ED | Sediment Dermal Exposure Duration (years) | 6 | |
| CF | Conversion Factor (kg/mg) | 0.000001 | |
| BW | Body Weight (kg) | 15 | |
| AT | Averaging Time (days) | 2,190 | |

**Dermal - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{SA \times EV \times EF \times ED}{BW \times AT}$$

| | | | |
|---|---|---|---|
| = | 1.9E+01 | (Child) | $Intake_{derm}(mg/kg{\cdot}d)$ = IF x Absorbed Dose per Event ($DA_{Event}$) |
| SA | Surface Area Exposed to Surface Water ($cm^2$) | 2,373 | ($DA_{event}$) presented in Table 4.6 |
| EF | Surface Water Dermal Exposure Frequency (days/year) | 44 | Non-cancer Hazard = Intake/RfD |
| ED | Surface Water Dermal Exposure Duration (years) | 6 | |
| EV | Events per Day (events/day) | 1 | |
| BW | Body Weight (kg) | 15 | |
| AT | Averaging Time (days) | 2,190 | |

**Table 7.13**
**Calculation of Chemical Non-cancer Hazards for Swimmer**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.0E+03 | mg/kg | 1.1E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 1.1E-03 |
| | | | Ingestion | ANTIMONY | 2.3E+00 | mg/kg | 8.1E-07 | mg/kg-d | 4.0E-04 | mg/kg-d | 2.0E-03 |
| | | | Ingestion | ARSENIC | 9.8E+00 | mg/kg | 2.1E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.1E-03 |
| | | | Ingestion | CHROMIUM | 1.6E+01 | mg/kg | 5.8E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 1.9E-03 |
| | | | Ingestion | COBALT | 6.2E+00 | mg/kg | 2.2E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.4E-03 |
| | | | Ingestion | COPPER | 1.0E+02 | mg/kg | 3.6E-05 | mg/kg-d | 4.0E-02 | mg/kg-d | 9.1E-04 |
| | | | Ingestion | CYANIDE | 2.7E+00 | mg/kg | 9.6E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.6E-03 |
| | | | Ingestion | IRON | 8.0E+03 | mg/kg | 2.9E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 4.1E-03 |
| | | | Ingestion | LEAD | 1.7E+02 | mg/kg | 6.1E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 3.9E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 1.6E-03 |
| | | | Ingestion | THALLIUM | 8.6E-01 | mg/kg | 3.1E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 3.1E-02 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 6.5E-02 | mg/kg | 2.3E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.2E-03 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 7.1E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 5.3E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.8E-02 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 1.1E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 2.2E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | CHRYSENE | 3.0E+01 | mg/kg | 1.1E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 5.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 1.5E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | **TICs** | | | | | | | |
| | | | Ingestion | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 4.3E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **7.7E-02** |
| Sediment | Sediment | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.0E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 2.3E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 9.8E+00 | mg/kg | 1.3E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.3E-03 |
| | | | Dermal | CHROMIUM | 1.6E+01 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 6.2E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.0E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 2.7E+00 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 8.0E+03 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.7E+02 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 8.6E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 6.5E-02 | mg/kg | 3.9E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 2.0E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 1.1E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 8.3E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.8E-02 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 1.7E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 3.5E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | CHRYSENE | 3.0E+01 | mg/kg | 1.7E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 8.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 2.3E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | **TICs** | | | | | | | |
| | | | Dermal | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 6.8E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **3.4E-02** |
| Surface Water | Surface Water | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ARSENIC | 7.8E-03 | mg/L | 5.0E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.7E-02 |
| | | | Ingestion | CHROMIUM | 2.6E-03 | mg/L | 1.6E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 5.4E-04 |
| | | | Ingestion | COBALT | 2.1E-03 | mg/L | 1.4E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.5E-03 |
| | | | Ingestion | CYANIDE | 4.4E-03 | mg/L | 2.8E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 4.7E-03 |
| | | | Ingestion | IRON | 1.1E+01 | mg/L | 7.2E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.0E-02 |
| | | | Ingestion | MANGANESE | 9.5E-01 | mg/L | 6.1E-04 | mg/kg-d | 2.4E-02 | mg/kg-d | 2.5E-02 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 4.3E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 2.0E-04 | mg/L | 1.3E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.3E-04 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 8.5E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 1.1E-06 | mg/kg-d | 2.0E-02 | mg/kg-d | 5.7E-05 |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 4.4E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 5.6E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **6E-02** |
| Surface Water | Surface Water | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ARSENIC | 7.8E-03 | mg/L | 1.3E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.2E-03 |
| | | | Dermal | CHROMIUM | 2.6E-03 | mg/L | 4.1E-07 | mg/kg-d | 7.5E-05 | mg/kg-d | 5.5E-03 |
| | | | Dermal | COBALT | 2.1E-03 | mg/L | 1.4E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.6E-04 |
| | | | Dermal | CYANIDE | 4.4E-03 | mg/L | 7.2E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.2E-03 |
| | | | Dermal | IRON | 1.1E+01 | mg/L | 1.8E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 2.6E-03 |
| | | | Dermal | MANGANESE | 9.5E-01 | mg/L | 1.5E-04 | mg/kg-d | 9.6E-04 | mg/kg-d | 1.6E-01 |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | SL | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 1.6E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 2.0E-04 | mg/L | 7.0E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.3E-01 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 2.7E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 1.9E-03 | mg/kg-d | 2.0E-02 | mg/kg-d | 9.7E-02 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 2.3E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 3.8E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **5E-01** |
| **Exposure Point Total (SL)** | | | | | | | | | | | **7E-01** |
| Sediment | Sediment | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.5E+04 | mg/kg | 5.3E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 5.3E-03 |
| | | | Ingestion | ANTIMONY | 7.3E+00 | mg/kg | 2.6E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 6.5E-03 |
| | | | Ingestion | ARSENIC | 2.8E+02 | mg/kg | 6.1E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.0E-01 |
| | | | Ingestion | CADMIUM | 1.3E+01 | mg/kg | 4.8E-06 | mg/kg-d | 1.0E-03 | mg/kg-d | 4.8E-03 |
| | | | Ingestion | CHROMIUM | 1.6E+02 | mg/kg | 5.6E-05 | mg/kg-d | 3.0E-03 | mg/kg-d | 1.9E-02 |
| | | | Ingestion | COBALT | 1.7E+01 | mg/kg | 6.0E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.0E-02 |
| | | | Ingestion | COPPER | 1.8E+02 | mg/kg | 6.3E-05 | mg/kg-d | 4.0E-02 | mg/kg-d | 1.6E-03 |
| | | | Ingestion | CYANIDE | 1.5E+01 | mg/kg | 5.5E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 9.1E-03 |
| | | | Ingestion | IRON | 4.2E+04 | mg/kg | 1.5E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 2.2E-02 |
| | | | Ingestion | LEAD | 1.5E+03 | mg/kg | 5.3E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 3.9E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 1.6E-03 |
| | | | Ingestion | VANADIUM | 5.6E+01 | mg/kg | 2.0E-05 | mg/kg-d | 5.0E-03 | mg/kg-d | 4.0E-03 |
| | | | Ingestion | ZINC | 1.1E+03 | mg/kg | 4.0E-04 | mg/kg-d | 3.0E-01 | mg/kg-d | 1.3E-03 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 8.0E-02 | mg/kg | 2.9E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.4E-03 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 4.8E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 4.9E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.6E-03 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 7.3E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 7.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 1.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 2.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | NAPHTHALENE | 2.8E+00 | mg/kg | 1.0E-06 | mg/kg-d | 2.0E-02 | mg/kg-d | 5.1E-05 |
| | | | Ingestion | **VOCs** | | | | | | | |
| | | | Ingestion | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | 2.4E-08 | mg/kg-d | 5.0E-04 | mg/kg-d | 4.8E-05 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **3.0E-01** |
| Sediment | Sediment | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.5E+04 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 7.3E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 2.8E+02 | mg/kg | 3.7E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.2E-01 |
| | | | Dermal | CADMIUM | 1.3E+01 | mg/kg | 5.8E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 2.3E-03 |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Dermal | CHROMIUM | 1.6E+02 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 1.7E+01 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.8E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 1.5E+01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 4.2E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.5E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 5.6E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | ZINC | 1.1E+03 | mg/kg | NA | mg/kg-d | 3.0E-01 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 8.0E-02 | mg/kg | 4.9E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 2.4E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 7.6E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 7.7E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.6E-03 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 1.1E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 1.1E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 1.6E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 4.2E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | NAPHTHALENE | 2.8E+00 | mg/kg | 1.6E-06 | mg/kg-d | 2.0E-02 | mg/kg-d | 8.0E-05 |
| | | | Dermal | **VOCs** | | | | | | | |
| | | | Dermal | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | NA | mg/kg-d | 5.0E-04 | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **1.3E-01** |
| Surface Water | Surface Water | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.3E+00 | mg/L | 8.2E-04 | mg/kg-d | 1.0E+00 | mg/kg-d | 8.2E-04 |
| | | | Ingestion | ANTIMONY | 1.2E-03 | mg/L | 7.3E-07 | mg/kg-d | 4.0E-04 | mg/kg-d | 1.8E-03 |
| | | | Ingestion | ARSENIC | 3.1E-02 | mg/L | 2.0E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 6.5E-02 |
| | | | Ingestion | CADMIUM | 6.2E-04 | mg/L | 4.0E-07 | mg/kg-d | 5.0E-04 | mg/kg-d | 7.9E-04 |
| | | | Ingestion | CHROMIUM | 4.5E-03 | mg/L | 2.9E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 9.5E-04 |
| | | | Ingestion | COBALT | 1.0E-03 | mg/L | 6.4E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.1E-03 |
| | | | Ingestion | CYANIDE | 2.0E-03 | mg/L | 1.3E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 2.1E-03 |
| | | | Ingestion | IRON | 6.5E+00 | mg/L | 4.1E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 5.9E-03 |
| | | | Ingestion | LEAD | 2.6E-02 | mg/L | 1.6E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 7.0E-02 | mg/L | 4.5E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 1.9E-03 |
| | | | Ingestion | THALLIUM | 1.2E-03 | mg/L | 7.9E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 7.9E-02 |
| | | | Ingestion | VANADIUM | 2.5E-03 | mg/L | 1.6E-06 | mg/kg-d | 5.0E-03 | mg/kg-d | 3.1E-04 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 3.4E-05 | mg/L | 2.2E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.2E-05 |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **2E-01** |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.3E+00 | mg/L | 2.1E-04 | mg/kg-d | 1.0E+00 | mg/kg-d | 2.1E-04 |
| | | | Dermal | ANTIMONY | 1.2E-03 | mg/L | 1.9E-07 | mg/kg-d | 6.0E-05 | mg/kg-d | 3.1E-03 |
| | | | Dermal | ARSENIC | 3.1E-02 | mg/L | 4.9E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.6E-02 |
| | | | Dermal | CADMIUM | 6.2E-04 | mg/L | 1.0E-07 | mg/kg-d | 2.5E-05 | mg/kg-d | 4.0E-03 |
| | | | Dermal | CHROMIUM | 4.5E-03 | mg/L | 7.2E-07 | mg/kg-d | 7.5E-05 | mg/kg-d | 9.6E-03 |
| | | | Dermal | COBALT | 1.0E-03 | mg/L | 6.5E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.2E-04 |
| | | | Dermal | CYANIDE | 2.0E-03 | mg/L | 3.2E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 5.4E-04 |
| | | | Dermal | IRON | 6.5E+00 | mg/L | 1.0E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.5E-03 |
| | | | Dermal | LEAD | 2.6E-02 | mg/L | 4.1E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 7.0E-02 | mg/L | 1.1E-05 | mg/kg-d | 9.6E-04 | mg/kg-d | 1.2E-02 |
| | | | Dermal | THALLIUM | 1.2E-03 | mg/L | 2.0E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 2.0E-02 |
| | | | Dermal | VANADIUM | 2.5E-03 | mg/L | 4.0E-07 | mg/kg-d | 1.3E-04 | mg/kg-d | 3.0E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 3.4E-05 | mg/L | 1.2E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.0E-02 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1E-01** |
| **Exposure Point Total (BWL)** | | | | | | | | | | | **7E-01** |
| Sediment | Sediment | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.6E+04 | mg/kg | 5.8E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 5.8E-03 |
| | | | Ingestion | ANTIMONY | 2.0E+00 | mg/kg | 7.3E-07 | mg/kg-d | 4.0E-04 | mg/kg-d | 1.8E-03 |
| | | | Ingestion | ARSENIC | 8.8E+01 | mg/kg | 1.9E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 6.3E-02 |
| | | | Ingestion | CADMIUM | 7.7E+00 | mg/kg | 2.8E-06 | mg/kg-d | 1.0E-03 | mg/kg-d | 2.8E-03 |
| | | | Ingestion | CHROMIUM | 1.7E+02 | mg/kg | 6.2E-05 | mg/kg-d | 3.0E-03 | mg/kg-d | 2.1E-02 |
| | | | Ingestion | COBALT | 8.6E+00 | mg/kg | 3.1E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.0E-02 |
| | | | Ingestion | COPPER | 2.1E+02 | mg/kg | 7.5E-05 | mg/kg-d | 4.0E-02 | mg/kg-d | 1.9E-03 |
| | | | Ingestion | CYANIDE | 4.1E+00 | mg/kg | 1.5E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 2.4E-03 |
| | | | Ingestion | IRON | 2.7E+04 | mg/kg | 9.5E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.4E-02 |
| | | | Ingestion | LEAD | 1.0E+03 | mg/kg | 3.6E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.4E+02 | mg/kg | 5.1E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 2.1E-03 |
| | | | Ingestion | NICKEL | 3.7E+01 | mg/kg | 1.3E-05 | mg/kg-d | 2.0E-02 | mg/kg-d | 6.6E-04 |
| | | | Ingestion | THALLIUM | 4.7E-01 | mg/kg | 1.7E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 1.7E-02 |
| | | | Ingestion | VANADIUM | 2.6E+01 | mg/kg | 9.4E-06 | mg/kg-d | 5.0E-03 | mg/kg-d | 1.9E-03 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.6E-01 | mg/kg | 5.9E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 2.9E-03 |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | KWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 4.1E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 3.9E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.3E-03 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 5.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 4.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 5.9E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 1.5E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **1.5E-01** |
| Sediment | Sediment | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.6E+04 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 2.0E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 8.8E+01 | mg/kg | 1.1E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.8E-02 |
| | | | Dermal | CADMIUM | 7.7E+00 | mg/kg | 3.3E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 1.3E-03 |
| | | | Dermal | CHROMIUM | 1.7E+02 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 8.6E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 2.1E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 4.1E+00 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 2.7E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.0E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.4E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | NICKEL | 3.7E+01 | mg/kg | NA | mg/kg-d | 8.0E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 4.7E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 2.6E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.6E-01 | mg/kg | 1.0E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 5.0E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 6.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 6.0E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.0E-03 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 7.8E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 6.8E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 9.2E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 2.3E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **4.7E-02** |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.4E+00 | mg/L | 8.8E-04 | mg/kg-d | 1.0E+00 | mg/kg-d | 8.8E-04 |
| | | | Ingestion | ANTIMONY | 3.7E-03 | mg/L | 2.4E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 5.9E-03 |
| | | | Ingestion | ARSENIC | 1.7E-02 | mg/L | 1.1E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.6E-02 |
| | | | Ingestion | CHROMIUM | 5.3E-03 | mg/L | 3.4E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 1.1E-03 |
| | | | Ingestion | COBALT | 1.6E-03 | mg/L | 1.0E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.4E-03 |
| | | | Ingestion | CYANIDE | 1.8E-03 | mg/L | 1.1E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.9E-03 |
| | | | Ingestion | IRON | 3.6E+00 | mg/L | 2.3E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 3.3E-03 |
| | | | Ingestion | LEAD | 2.9E-02 | mg/L | 1.9E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 8.0E-02 | mg/L | 5.1E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 2.1E-03 |
| | | | Ingestion | THALLIUM | 5.8E-03 | mg/L | 3.7E-06 | mg/kg-d | 1.0E-05 | mg/kg-d | 3.7E-01 |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **4E-01** |
| Surface Water | Surface Water | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.4E+00 | mg/L | 2.2E-04 | mg/kg-d | 1.0E+00 | mg/kg-d | 2.2E-04 |
| | | | Dermal | ANTIMONY | 3.7E-03 | mg/L | 6.0E-07 | mg/kg-d | 6.0E-05 | mg/kg-d | 9.9E-03 |
| | | | Dermal | ARSENIC | 1.7E-02 | mg/L | 2.7E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 9.0E-03 |
| | | | Dermal | CHROMIUM | 5.3E-03 | mg/L | 8.6E-07 | mg/kg-d | 7.5E-05 | mg/kg-d | 1.1E-02 |
| | | | Dermal | COBALT | 1.6E-03 | mg/L | 1.0E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.4E-04 |
| | | | Dermal | CYANIDE | 1.8E-03 | mg/L | 2.9E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 4.8E-04 |
| | | | Dermal | IRON | 3.6E+00 | mg/L | 5.8E-04 | mg/kg-d | 7.0E-01 | mg/kg-d | 8.3E-04 |
| | | | Dermal | LEAD | 2.9E-02 | mg/L | 4.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 8.0E-02 | mg/L | 1.3E-05 | mg/kg-d | 9.6E-04 | mg/kg-d | 1.3E-02 |
| | | | Dermal | THALLIUM | 5.8E-03 | mg/L | 9.3E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 9.3E-02 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1E-01** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **8E-01** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

**Ingestion - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{\text{IR} \times \text{FS} \times \text{EF} \times \text{ED} \times \text{CF}}{\text{BW} \times \text{AT}} = 3.6\text{E-}07 \text{ (Adult)}$$

| | | |
|---|---|---|
| IR | Ingestion Rate (mg/day) | 100 |
| FS | Fraction from Contaminated Source | 1 |
| EF | Sediment Ingestion Exposure Frequency (days/year) | 105 |
| ED | Sediment Ingestion Exposure Duration (years) | 26 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 80 |
| AT | Averaging Time (days) | 9,490 |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{sediment} * IF * B$

(B) presented in Table 5.1

Non-cancer Hazard = Intake/RfD

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |

**Dermal - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{\text{SA x AF x EF x ED x CF}}{\text{BW x AT}}$$

| | | | |
|---|---|---|---|
| = | 4.3E-06 | (Adult) | |
| SA | Surface Area Exposed to Sediment ($cm^2$/day) | 6,032 | |
| AF | Sediment Skin Adherence Factor ($mg/cm^2$) | 0.2 | |
| EF | Sediment Dermal Exposure Frequency (days/year) | 105 | |
| ED | Sediment Dermal Exposure Duration (years) | 26 | |
| CF | Conversion Factor (kg/mg) | 0.000001 | |
| BW | Body Weight (kg) | 80 | |
| AT | Averaging Time (days) | 9,490 | |

$Intake_{derm}(mg/kg{\cdot}d) = EPC_{sediment} * IF * ABS$
(ABS) presented in Table 5.1
Non-cancer Hazard = Intake/RfD

**Ingestion - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{\text{IR x FR x ET x EF x ED}}{\text{BW x AT}}$$

| | | | |
|---|---|---|---|
| = | 6.4E-04 | (Adult) | |
| IR | Ingestion Rate - Surface Water (L/hour) | 0.071 | |
| FS | Fraction from Contaminated Source | 1 | |
| ET | Surface Water Exposure Time (hours/day) | 2.5 | |
| EF | Surface Water Ingestion Exposure Frequency (days/year) | 105 | |
| ED | Surface Water Exposure Duration (years) | 26 | |
| BW | Body Weight (kg) | 80 | |
| AT | Averaging Time (days) | 9,490 | |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{sw} * IF$
Non-cancer Hazard = Intake/RfD

**Dermal - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{\text{SA x EV x EF x ED}}{\text{BW x AT}}$$

| | | | |
|---|---|---|---|
| = | 7.1E+01 | (Adult) | |
| SA | Surface Area Exposed to Surface Water ($cm^2$) | 19,652 | |
| EF | Surface Water Dermal Exposure Frequency (days/year) | 105 | |
| ED | Surface Water Dermal Exposure Duration (years) | 26 | |
| EV | Events per Day (events/day) | 1 | |
| BW | Body Weight (kg) | 80 | |
| AT | Averaging Time (days) | 9,490 | |

$Intake_{derm}(mg/kg{\cdot}d) = IF \times Absorbed\ Dose\ per\ Event\ (DA_{Event})$
$(DA_{event})$ presented in Table 4.6
Non-cancer Hazard = Intake/RfD

**Table 7.14**
**Calculation of Chemical Non-cancer Hazards for Swimmer**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.0E+03 | mg/kg | 1.9E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 1.9E-03 |
| | | | Ingestion | ANTIMONY | 2.3E+00 | mg/kg | 1.5E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 3.7E-03 |
| | | | Ingestion | ARSENIC | 9.8E+00 | mg/kg | 3.8E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.3E-02 |
| | | | Ingestion | CHROMIUM | 1.6E+01 | mg/kg | 1.0E-05 | mg/kg-d | 3.0E-03 | mg/kg-d | 3.5E-03 |
| | | | Ingestion | COBALT | 6.2E+00 | mg/kg | 4.0E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.3E-02 |
| | | | Ingestion | COPPER | 1.0E+02 | mg/kg | 6.6E-05 | mg/kg-d | 4.0E-02 | mg/kg-d | 1.6E-03 |
| | | | Ingestion | CYANIDE | 2.7E+00 | mg/kg | 1.7E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 2.9E-03 |
| | | | Ingestion | IRON | 8.0E+03 | mg/kg | 5.2E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 7.4E-03 |
| | | | Ingestion | LEAD | 1.7E+02 | mg/kg | 1.1E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 7.1E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 3.0E-03 |
| | | | Ingestion | THALLIUM | 8.6E-01 | mg/kg | 5.6E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 5.6E-02 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 6.5E-02 | mg/kg | 4.2E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 2.1E-03 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 1.3E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 9.5E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.2E-02 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 1.9E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 4.1E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | CHRYSENE | 3.0E+01 | mg/kg | 1.9E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 9.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 2.6E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | **TICs** | | | | | | | |
| | | | Ingestion | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 7.8E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **1.4E-01** |
| Sediment | Sediment | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.0E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 2.3E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 9.8E+00 | mg/kg | 1.8E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.9E-03 |
| | | | Dermal | CHROMIUM | 1.6E+01 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 6.2E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.0E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 2.7E+00 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 8.0E+03 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.7E+02 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 8.6E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 6.5E-02 | mg/kg | 5.5E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 2.7E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 1.5E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 1.1E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.8E-02 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 2.3E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 4.9E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | CHRYSENE | 3.0E+01 | mg/kg | 2.3E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 1.2E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 3.2E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | **TICs** | | | | | | | |
| | | | Dermal | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 9.4E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **4.7E-02** |
| Surface Water | Surface Water | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ARSENIC | 7.8E-03 | mg/L | 7.2E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.4E-02 |
| | | | Ingestion | CHROMIUM | 2.6E-03 | mg/L | 2.4E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 7.9E-04 |
| | | | Ingestion | COBALT | 2.1E-03 | mg/L | 2.0E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 6.6E-03 |
| | | | Ingestion | CYANIDE | 4.4E-03 | mg/L | 4.1E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 6.8E-03 |
| | | | Ingestion | IRON | 1.1E+01 | mg/L | 1.0E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.5E-02 |
| | | | Ingestion | MANGANESE | 9.5E-01 | mg/L | 8.8E-04 | mg/kg-d | 2.4E-02 | mg/kg-d | 3.6E-02 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 6.2E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 2.0E-04 | mg/L | 1.8E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 6.2E-04 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 1.2E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 1.7E-06 | mg/kg-d | 2.0E-02 | mg/kg-d | 8.3E-05 |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 6.3E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 8.1E-08 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **9E-02** |
| Surface Water | Surface Water | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ARSENIC | 7.8E-03 | mg/L | 1.4E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.5E-03 |
| | | | Dermal | CHROMIUM | 2.6E-03 | mg/L | 4.4E-07 | mg/kg-d | 7.5E-05 | mg/kg-d | 5.9E-03 |
| | | | Dermal | COBALT | 2.1E-03 | mg/L | 1.5E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.9E-04 |
| | | | Dermal | CYANIDE | 4.4E-03 | mg/L | 7.7E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.3E-03 |
| | | | Dermal | IRON | 1.1E+01 | mg/L | 2.0E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 2.8E-03 |
| | | | Dermal | MANGANESE | 9.5E-01 | mg/L | 1.6E-04 | mg/kg-d | 9.6E-04 | mg/kg-d | 1.7E-01 |

| | |
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| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | SL | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 1.8E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 2.0E-04 | mg/L | 8.0E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.7E-01 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 3.1E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 2.2E-03 | mg/kg-d | 2.0E-02 | mg/kg-d | 1.1E-01 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 2.6E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 4.3E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **6E-01** |
| **Exposure Point Total (SL)** | | | | | | | | | | | **8E-01** |
| Sediment | Sediment | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.5E+04 | mg/kg | 9.5E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 9.5E-03 |
| | | | Ingestion | ANTIMONY | 7.3E+00 | mg/kg | 4.7E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 1.2E-02 |
| | | | Ingestion | ARSENIC | 2.8E+02 | mg/kg | 1.1E-04 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.7E-01 |
| | | | Ingestion | CADMIUM | 1.3E+01 | mg/kg | 8.7E-06 | mg/kg-d | 1.0E-03 | mg/kg-d | 8.7E-03 |
| | | | Ingestion | CHROMIUM | 1.6E+02 | mg/kg | 1.0E-04 | mg/kg-d | 3.0E-03 | mg/kg-d | 3.4E-02 |
| | | | Ingestion | COBALT | 1.7E+01 | mg/kg | 1.1E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.6E-02 |
| | | | Ingestion | COPPER | 1.8E+02 | mg/kg | 1.1E-04 | mg/kg-d | 4.0E-02 | mg/kg-d | 2.9E-03 |
| | | | Ingestion | CYANIDE | 1.5E+01 | mg/kg | 9.9E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.6E-02 |
| | | | Ingestion | IRON | 4.2E+04 | mg/kg | 2.7E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 3.9E-02 |
| | | | Ingestion | LEAD | 1.5E+03 | mg/kg | 9.6E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 7.1E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 3.0E-03 |
| | | | Ingestion | VANADIUM | 5.6E+01 | mg/kg | 3.6E-05 | mg/kg-d | 5.0E-03 | mg/kg-d | 7.3E-03 |
| | | | Ingestion | ZINC | 1.1E+03 | mg/kg | 7.3E-04 | mg/kg-d | 3.0E-01 | mg/kg-d | 2.4E-03 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 8.0E-02 | mg/kg | 5.2E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 2.6E-03 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 8.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 8.9E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.0E-03 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 1.3E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 1.3E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 1.9E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 4.8E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | NAPHTHALENE | 2.8E+00 | mg/kg | 1.8E-06 | mg/kg-d | 2.0E-02 | mg/kg-d | 9.2E-05 |
| | | | Ingestion | **VOCs** | | | | | | | |
| | | | Ingestion | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | 4.3E-08 | mg/kg-d | 5.0E-04 | mg/kg-d | 8.7E-05 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **5.5E-01** |

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|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.5E+04 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 7.3E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 2.8E+02 | mg/kg | 5.1E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.7E-01 |
| | | | Dermal | CADMIUM | 1.3E+01 | mg/kg | 8.0E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 3.2E-03 |
| | | | Dermal | CHROMIUM | 1.6E+02 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 1.7E+01 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.8E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 1.5E+01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 4.2E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.5E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 5.6E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | ZINC | 1.1E+03 | mg/kg | NA | mg/kg-d | 3.0E-01 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 8.0E-02 | mg/kg | 6.8E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 3.4E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 1.1E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 1.1E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.6E-03 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 1.6E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 1.5E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 2.2E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 5.8E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | NAPHTHALENE | 2.8E+00 | mg/kg | 2.2E-06 | mg/kg-d | 2.0E-02 | mg/kg-d | 1.1E-04 |
| | | | Dermal | **VOCs** | | | | | | | |
| | | | Dermal | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | NA | mg/kg-d | 5.0E-04 | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **1.8E-01** |
| Surface Water | Surface Water | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.3E+00 | mg/L | 1.2E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 1.2E-03 |
| | | | Ingestion | ANTIMONY | 1.2E-03 | mg/L | 1.1E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 2.7E-03 |
| | | | Ingestion | ARSENIC | 3.1E-02 | mg/L | 2.8E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 9.4E-02 |
| | | | Ingestion | CADMIUM | 6.2E-04 | mg/L | 5.7E-07 | mg/kg-d | 5.0E-04 | mg/kg-d | 1.1E-03 |
| | | | Ingestion | CHROMIUM | 4.5E-03 | mg/L | 4.1E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 1.4E-03 |
| | | | Ingestion | COBALT | 1.0E-03 | mg/L | 9.3E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.1E-03 |
| | | | Ingestion | CYANIDE | 2.0E-03 | mg/L | 1.8E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 3.1E-03 |
| | | | Ingestion | IRON | 6.5E+00 | mg/L | 6.0E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 8.6E-03 |
| | | | Ingestion | LEAD | 2.6E-02 | mg/L | 2.4E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 7.0E-02 | mg/L | 6.5E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 2.7E-03 |
| | | | Ingestion | THALLIUM | 1.2E-03 | mg/L | 1.1E-06 | mg/kg-d | 1.0E-05 | mg/kg-d | 1.1E-01 |
| | | | Ingestion | VANADIUM | 2.5E-03 | mg/L | 2.3E-06 | mg/kg-d | 5.0E-03 | mg/kg-d | 4.5E-04 |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | BWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 3.4E-05 | mg/L | 3.1E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.0E-04 |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **2E-01** |
| Surface Water | Surface Water | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.3E+00 | mg/L | 2.2E-04 | mg/kg-d | 1.0E+00 | mg/kg-d | 2.2E-04 |
| | | | Dermal | ANTIMONY | 1.2E-03 | mg/L | 2.0E-07 | mg/kg-d | 6.0E-05 | mg/kg-d | 3.3E-03 |
| | | | Dermal | ARSENIC | 3.1E-02 | mg/L | 5.3E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.8E-02 |
| | | | Dermal | CADMIUM | 6.2E-04 | mg/L | 1.1E-07 | mg/kg-d | 2.5E-05 | mg/kg-d | 4.3E-03 |
| | | | Dermal | CHROMIUM | 4.5E-03 | mg/L | 7.8E-07 | mg/kg-d | 7.5E-05 | mg/kg-d | 1.0E-02 |
| | | | Dermal | COBALT | 1.0E-03 | mg/L | 7.0E-08 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.3E-04 |
| | | | Dermal | CYANIDE | 2.0E-03 | mg/L | 3.5E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 5.8E-04 |
| | | | Dermal | IRON | 6.5E+00 | mg/L | 1.1E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.6E-03 |
| | | | Dermal | LEAD | 2.6E-02 | mg/L | 4.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 7.0E-02 | mg/L | 1.2E-05 | mg/kg-d | 9.6E-04 | mg/kg-d | 1.3E-02 |
| | | | Dermal | THALLIUM | 1.2E-03 | mg/L | 2.1E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 2.1E-02 |
| | | | Dermal | VANADIUM | 2.5E-03 | mg/L | 4.3E-07 | mg/kg-d | 1.3E-04 | mg/kg-d | 3.3E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 3.4E-05 | mg/L | 1.4E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.6E-02 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1E-01** |
| **Exposure Point Total (BWL)** | | | | | | | | | | | **1E+00** |
| Sediment | Sediment | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.6E+04 | mg/kg | 1.0E-02 | mg/kg-d | 1.0E+00 | mg/kg-d | 1.0E-02 |
| | | | Ingestion | ANTIMONY | 2.0E+00 | mg/kg | 1.3E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 3.3E-03 |
| | | | Ingestion | ARSENIC | 8.8E+01 | mg/kg | 3.4E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.1E-01 |
| | | | Ingestion | CADMIUM | 7.7E+00 | mg/kg | 5.0E-06 | mg/kg-d | 1.0E-03 | mg/kg-d | 5.0E-03 |
| | | | Ingestion | CHROMIUM | 1.7E+02 | mg/kg | 1.1E-04 | mg/kg-d | 3.0E-03 | mg/kg-d | 3.7E-02 |
| | | | Ingestion | COBALT | 8.6E+00 | mg/kg | 5.6E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.9E-02 |
| | | | Ingestion | COPPER | 2.1E+02 | mg/kg | 1.4E-04 | mg/kg-d | 4.0E-02 | mg/kg-d | 3.4E-03 |
| | | | Ingestion | CYANIDE | 4.1E+00 | mg/kg | 2.7E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 4.4E-03 |
| | | | Ingestion | IRON | 2.7E+04 | mg/kg | 1.7E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 2.5E-02 |
| | | | Ingestion | LEAD | 1.0E+03 | mg/kg | 6.6E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.4E+02 | mg/kg | 9.2E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 3.8E-03 |
| | | | Ingestion | NICKEL | 3.7E+01 | mg/kg | 2.4E-05 | mg/kg-d | 2.0E-02 | mg/kg-d | 1.2E-03 |
| | | | Ingestion | THALLIUM | 4.7E-01 | mg/kg | 3.0E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 3.0E-02 |
| | | | Ingestion | VANADIUM | 2.6E+01 | mg/kg | 1.7E-05 | mg/kg-d | 5.0E-03 | mg/kg-d | 3.4E-03 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.6E-01 | mg/kg | 1.1E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 5.3E-03 |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | KWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 7.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 7.0E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.3E-03 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 9.0E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 7.9E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 1.1E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 2.7E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **2.7E-01** |
| Sediment | Sediment | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.6E+04 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 2.0E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 8.8E+01 | mg/kg | 1.6E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.3E-02 |
| | | | Dermal | CADMIUM | 7.7E+00 | mg/kg | 4.6E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 1.9E-03 |
| | | | Dermal | CHROMIUM | 1.7E+02 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 8.6E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 2.1E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 4.1E+00 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 2.7E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.0E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.4E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | NICKEL | 3.7E+01 | mg/kg | NA | mg/kg-d | 8.0E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 4.7E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 2.6E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.6E-01 | mg/kg | 1.4E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 6.9E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 8.9E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 8.4E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.8E-03 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 1.1E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 9.5E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 1.3E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 3.3E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **6.5E-02** |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.4E+00 | mg/L | 1.3E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 1.3E-03 |
| | | | Ingestion | ANTIMONY | 3.7E-03 | mg/L | 3.4E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 8.5E-03 |
| | | | Ingestion | ARSENIC | 1.7E-02 | mg/L | 1.5E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.1E-02 |
| | | | Ingestion | CHROMIUM | 5.3E-03 | mg/L | 4.9E-06 | mg/kg-d | 3.0E-03 | mg/kg-d | 1.6E-03 |
| | | | Ingestion | COBALT | 1.6E-03 | mg/L | 1.5E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.9E-03 |
| | | | Ingestion | CYANIDE | 1.8E-03 | mg/L | 1.7E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 2.8E-03 |
| | | | Ingestion | IRON | 3.6E+00 | mg/L | 3.3E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 4.7E-03 |
| | | | Ingestion | LEAD | 2.9E-02 | mg/L | 2.7E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 8.0E-02 | mg/L | 7.3E-05 | mg/kg-d | 2.4E-02 | mg/kg-d | 3.1E-03 |
| | | | Ingestion | THALLIUM | 5.8E-03 | mg/L | 5.4E-06 | mg/kg-d | 1.0E-05 | mg/kg-d | 5.4E-01 |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **6E-01** |
| Surface Water | Surface Water | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.4E+00 | mg/L | 2.4E-04 | mg/kg-d | 1.0E+00 | mg/kg-d | 2.4E-04 |
| | | | Dermal | ANTIMONY | 3.7E-03 | mg/L | 6.4E-07 | mg/kg-d | 6.0E-05 | mg/kg-d | 1.1E-02 |
| | | | Dermal | ARSENIC | 1.7E-02 | mg/L | 2.9E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 9.7E-03 |
| | | | Dermal | CHROMIUM | 5.3E-03 | mg/L | 9.2E-07 | mg/kg-d | 7.5E-05 | mg/kg-d | 1.2E-02 |
| | | | Dermal | COBALT | 1.6E-03 | mg/L | 1.1E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.7E-04 |
| | | | Dermal | CYANIDE | 1.8E-03 | mg/L | 3.1E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 5.2E-04 |
| | | | Dermal | IRON | 3.6E+00 | mg/L | 6.2E-04 | mg/kg-d | 7.0E-01 | mg/kg-d | 8.9E-04 |
| | | | Dermal | LEAD | 2.9E-02 | mg/L | 5.1E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 8.0E-02 | mg/L | 1.4E-05 | mg/kg-d | 9.6E-04 | mg/kg-d | 1.4E-02 |
| | | | Dermal | THALLIUM | 5.8E-03 | mg/L | 1.0E-06 | mg/kg-d | 1.0E-05 | mg/kg-d | 1.0E-01 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1E-01** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **1E+00** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

**Ingestion - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{\text{IR x FS x EF x ED x CF}}{\text{BW x AT}}$$

= 6.5E-07 (Adolescent)

| | | |
|---|---|---|
| IR | Ingestion Rate (mg/day) | 100 |
| FS | Fraction from Contaminated Source | 1 |
| EF | Sediment Ingestion Exposure Frequency (days/year) | 105 |
| ED | Sediment Ingestion Exposure Duration (years) | 10 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 44 |
| AT | Averaging Time (days) | 3,650 |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{sediment} * IF * B$

(B) presented in Table 5.1

Non-cancer Hazard = Intake/RfD

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |

**Dermal - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{\text{SA x AF x EF x ED x CF}}{\text{BW x AT}}$$

| | | | |
|---|---|---|---|
| = | | 6.0E-06 | (Adolescent) |
| SA | Surface Area Exposed to Sediment ($cm^2$/day) | 4,639 | |
| AF | Sediment Skin Adherence Factor ($mg/cm^2$) | 0.2 | |
| EF | Sediment Dermal Exposure Frequency (days/year) | 105 | |
| ED | Sediment Dermal Exposure Duration (years) | 10 | |
| CF | Conversion Factor (kg/mg) | 0.000001 | |
| BW | Body Weight (kg) | 44 | |
| AT | Averaging Time (days) | 3,650 | |

$Intake_{derm}(mg/kg{\cdot}d) = EPC_{sediment} * IF * ABS$
(ABS) presented in Table 5.1
Non-cancer Hazard = Intake/RfD

**Ingestion - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{\text{IR x FR x ET x EF x ED}}{\text{BW x AT}}$$

| | | | |
|---|---|---|---|
| = | | 9.2E-04 | (Adolescent) |
| IR | Ingestion Rate - Surface Water (L/hour) | 0.071 | |
| FS | Fraction from Contaminated Source | 1 | |
| ET | Surface Water Exposure Time (hours/day) | 2.0 | |
| EF | Surface Water Ingestion Exposure Frequency (days/year) | 105 | |
| ED | Surface Water Exposure Duration (years) | 10 | |
| BW | Body Weight (kg) | 44.3 | |
| AT | Averaging Time (days) | 3,650 | |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{sw} * IF$
Non-cancer Hazard = Intake/RfD

**Dermal - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{\text{SA x EV x EF x ED}}{\text{BW x AT}}$$

| | | | |
|---|---|---|---|
| = | | 8.7E+01 | (Adolescent) |
| SA | Surface Area Exposed to Surface Water ($cm^2$) | 13,350 | |
| EF | Surface Water Dermal Exposure Frequency (days/year) | 105 | |
| ED | Surface Water Dermal Exposure Duration (years) | 10 | |
| EV | Events per Day (events/day) | 1 | |
| BW | Body Weight (kg) | 44 | |
| AT | Averaging Time (days) | 3,650 | |

$Intake_{derm}(mg/kg{\cdot}d)$ = IF x Absorbed Dose per Event ($DA_{Event}$)
($DA_{event}$) presented in Table 4.6
Non-cancer Hazard = Intake/RfD

**Table 7.15**
**Calculation of Chemical Non-cancer Hazards for Swimmer**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 3.0E+03 | mg/kg | 1.1E-02 | mg/kg-d | 1.0E+00 | mg/kg-d | 1.1E-02 |
| | | | Ingestion | ANTIMONY | 2.3E+00 | mg/kg | 8.7E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 2.2E-02 |
| | | | Ingestion | ARSENIC | 9.8E+00 | mg/kg | 2.3E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.6E-02 |
| | | | Ingestion | CHROMIUM | 1.6E+01 | mg/kg | 6.1E-05 | mg/kg-d | 3.0E-03 | mg/kg-d | 2.0E-02 |
| | | | Ingestion | COBALT | 6.2E+00 | mg/kg | 2.4E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.9E-02 |
| | | | Ingestion | COPPER | 1.0E+02 | mg/kg | 3.9E-04 | mg/kg-d | 4.0E-02 | mg/kg-d | 9.7E-03 |
| | | | Ingestion | CYANIDE | 2.7E+00 | mg/kg | 1.0E-05 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.7E-02 |
| | | | Ingestion | IRON | 8.0E+03 | mg/kg | 3.1E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 4.4E-02 |
| | | | Ingestion | LEAD | 1.7E+02 | mg/kg | 6.5E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 4.2E-04 | mg/kg-d | 2.4E-02 | mg/kg-d | 1.7E-02 |
| | | | Ingestion | THALLIUM | 8.6E-01 | mg/kg | 3.3E-06 | mg/kg-d | 1.0E-05 | mg/kg-d | 3.3E-01 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 6.5E-02 | mg/kg | 2.5E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.2E-02 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 7.6E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 5.6E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.9E-01 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 1.1E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 2.4E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | CHRYSENE | 3.0E+01 | mg/kg | 1.1E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 5.7E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 1.6E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | **TICs** | | | | | | | |
| | | | Ingestion | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 4.6E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **8.3E-01** |
| Sediment | Sediment | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 3.0E+03 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 2.3E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 9.8E+00 | mg/kg | 2.7E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 9.0E-03 |
| | | | Dermal | CHROMIUM | 1.6E+01 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 6.2E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.0E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 2.7E+00 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 8.0E+03 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.7E+02 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 8.6E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | SL | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 6.5E-02 | mg/kg | 8.3E-08 | mg/kg-d | 2.0E-05 | mg/kg-d | 4.1E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 2.0E+01 | mg/kg | 2.3E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.5E+01 | mg/kg | 1.7E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.8E-02 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 3.0E+01 | mg/kg | 3.5E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 6.3E+00 | mg/kg | 7.4E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | CHRYSENE | 3.0E+01 | mg/kg | 3.5E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.5E+00 | mg/kg | 1.8E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.1E+00 | mg/kg | 4.8E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | **TICs** | | | | | | | |
| | | | Dermal | BENZO[J]FLUORANTHENE | 1.2E+01 | mg/kg | 1.4E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **7.1E-02** |
| Surface Water | Surface Water | SL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ARSENIC | 7.8E-03 | mg/L | 4.9E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.6E-01 |
| | | | Ingestion | CHROMIUM | 2.6E-03 | mg/L | 1.6E-05 | mg/kg-d | 3.0E-03 | mg/kg-d | 5.4E-03 |
| | | | Ingestion | COBALT | 2.1E-03 | mg/L | 1.3E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.5E-02 |
| | | | Ingestion | CYANIDE | 4.4E-03 | mg/L | 2.8E-05 | mg/kg-d | 6.0E-04 | mg/kg-d | 4.7E-02 |
| | | | Ingestion | IRON | 1.1E+01 | mg/L | 7.1E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.0E-01 |
| | | | Ingestion | MANGANESE | 9.5E-01 | mg/L | 6.0E-03 | mg/kg-d | 2.4E-02 | mg/kg-d | 2.5E-01 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 4.2E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 2.0E-04 | mg/L | 1.3E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.2E-03 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 8.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 1.1E-05 | mg/kg-d | 2.0E-02 | mg/kg-d | 5.6E-04 |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 4.3E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 5.5E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **6E-01** |
| Surface Water | Surface Water | SL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ARSENIC | 7.8E-03 | mg/L | 2.6E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 8.7E-03 |
| | | | Dermal | CHROMIUM | 2.6E-03 | mg/L | 8.6E-07 | mg/kg-d | 7.5E-05 | mg/kg-d | 1.1E-02 |
| | | | Dermal | COBALT | 2.1E-03 | mg/L | 2.8E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 9.5E-04 |
| | | | Dermal | CYANIDE | 4.4E-03 | mg/L | 1.5E-06 | mg/kg-d | 6.0E-04 | mg/kg-d | 2.5E-03 |
| | | | Dermal | IRON | 1.1E+01 | mg/L | 3.8E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 5.4E-03 |
| | | | Dermal | MANGANESE | 9.5E-01 | mg/L | 3.2E-04 | mg/kg-d | 9.6E-04 | mg/kg-d | 3.3E-01 |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | SL | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 6.7E-05 | mg/L | 3.0E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 2.0E-04 | mg/L | 1.3E-04 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.4E-01 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.3E-04 | mg/L | 5.2E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-03 | mg/L | 3.7E-03 | mg/kg-d | 2.0E-02 | mg/kg-d | 1.8E-01 |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 6.8E-05 | mg/L | 4.3E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 8.8E-05 | mg/L | 7.1E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **1E+00** |
| **Exposure Point Total (SL)** | | | | | | | | | | | **2E+00** |
| Sediment | Sediment | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.5E+04 | mg/kg | 5.6E-02 | mg/kg-d | 1.0E+00 | mg/kg-d | 5.6E-02 |
| | | | Ingestion | ANTIMONY | 7.3E+00 | mg/kg | 2.8E-05 | mg/kg-d | 4.0E-04 | mg/kg-d | 7.0E-02 |
| | | | Ingestion | ARSENIC | 2.8E+02 | mg/kg | 6.5E-04 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.2E+00 |
| | | | Ingestion | CADMIUM | 1.3E+01 | mg/kg | 5.1E-05 | mg/kg-d | 1.0E-03 | mg/kg-d | 5.1E-02 |
| | | | Ingestion | CHROMIUM | 1.6E+02 | mg/kg | 6.0E-04 | mg/kg-d | 3.0E-03 | mg/kg-d | 2.0E-01 |
| | | | Ingestion | COBALT | 1.7E+01 | mg/kg | 6.4E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.1E-01 |
| | | | Ingestion | COPPER | 1.8E+02 | mg/kg | 6.7E-04 | mg/kg-d | 4.0E-02 | mg/kg-d | 1.7E-02 |
| | | | Ingestion | CYANIDE | 1.5E+01 | mg/kg | 5.8E-05 | mg/kg-d | 6.0E-04 | mg/kg-d | 9.7E-02 |
| | | | Ingestion | IRON | 4.2E+04 | mg/kg | 1.6E-01 | mg/kg-d | 7.0E-01 | mg/kg-d | 2.3E-01 |
| | | | Ingestion | LEAD | 1.5E+03 | mg/kg | 5.7E-03 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.1E+02 | mg/kg | 4.2E-04 | mg/kg-d | 2.4E-02 | mg/kg-d | 1.8E-02 |
| | | | Ingestion | VANADIUM | 5.6E+01 | mg/kg | 2.1E-04 | mg/kg-d | 5.0E-03 | mg/kg-d | 4.3E-02 |
| | | | Ingestion | ZINC | 1.1E+03 | mg/kg | 4.3E-03 | mg/kg-d | 3.0E-01 | mg/kg-d | 1.4E-02 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 8.0E-02 | mg/kg | 3.1E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.5E-02 |
| | | | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 5.2E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 5.3E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.8E-02 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 7.8E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 7.5E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 1.1E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 2.9E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | NAPHTHALENE | 2.8E+00 | mg/kg | 1.1E-05 | mg/kg-d | 2.0E-02 | mg/kg-d | 5.5E-04 |
| | | | Ingestion | **VOCs** | | | | | | | |
| | | | Ingestion | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | 2.6E-07 | mg/kg-d | 5.0E-04 | mg/kg-d | 5.1E-04 |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **3.2E+00** |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.5E+04 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 7.3E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 2.8E+02 | mg/kg | 7.7E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.6E-01 |
| | | | Dermal | CADMIUM | 1.3E+01 | mg/kg | 1.2E-07 | mg/kg-d | 2.5E-05 | mg/kg-d | 4.9E-03 |
| | | | Dermal | CHROMIUM | 1.6E+02 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 1.7E+01 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 1.8E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 1.5E+01 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 4.2E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.5E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.1E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 5.6E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | ZINC | 1.1E+03 | mg/kg | NA | mg/kg-d | 3.0E-01 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 8.0E-02 | mg/kg | 1.0E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 5.1E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.3E+00 | mg/kg | 1.6E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.4E+00 | mg/kg | 1.6E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 5.4E-03 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 2.0E+00 | mg/kg | 2.4E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 2.0E+00 | mg/kg | 2.3E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 2.9E-01 | mg/kg | 3.4E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 7.5E-01 | mg/kg | 8.8E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | NAPHTHALENE | 2.8E+00 | mg/kg | 3.4E-06 | mg/kg-d | 2.0E-02 | mg/kg-d | 1.7E-04 |
| | | | Dermal | **VOCs** | | | | | | | |
| | | | Dermal | TRICHLOROETHYLENE (TCE) | 6.7E-02 | mg/kg | NA | mg/kg-d | 5.0E-04 | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **2.7E-01** |
| Surface Water | Surface Water | BWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.3E+00 | mg/L | 8.1E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 8.1E-03 |
| | | | Ingestion | ANTIMONY | 1.2E-03 | mg/L | 7.2E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 1.8E-02 |
| | | | Ingestion | ARSENIC | 3.1E-02 | mg/L | 1.9E-04 | mg/kg-d | 3.0E-04 | mg/kg-d | 6.4E-01 |
| | | | Ingestion | CADMIUM | 6.2E-04 | mg/L | 3.9E-06 | mg/kg-d | 5.0E-04 | mg/kg-d | 7.8E-03 |
| | | | Ingestion | CHROMIUM | 4.5E-03 | mg/L | 2.8E-05 | mg/kg-d | 3.0E-03 | mg/kg-d | 9.4E-03 |
| | | | Ingestion | COBALT | 1.0E-03 | mg/L | 6.4E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.1E-02 |
| | | | Ingestion | CYANIDE | 2.0E-03 | mg/L | 1.3E-05 | mg/kg-d | 6.0E-04 | mg/kg-d | 2.1E-02 |
| | | | Ingestion | IRON | 6.5E+00 | mg/L | 4.1E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 5.8E-02 |
| | | | Ingestion | LEAD | 2.6E-02 | mg/L | 1.6E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 7.0E-02 | mg/L | 4.4E-04 | mg/kg-d | 2.4E-02 | mg/kg-d | 1.8E-02 |
| | | | Ingestion | THALLIUM | 1.2E-03 | mg/L | 7.8E-06 | mg/kg-d | 1.0E-05 | mg/kg-d | 7.8E-01 |
| | | | Ingestion | VANADIUM | 2.5E-03 | mg/L | 1.5E-05 | mg/kg-d | 5.0E-03 | mg/kg-d | 3.1E-03 |

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| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | BWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)PYRENE | 3.4E-05 | mg/L | 2.1E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.1E-04 |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **2E+00** |
| Surface Water | Surface Water | BWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.3E+00 | mg/L | 4.3E-04 | mg/kg-d | 1.0E+00 | mg/kg-d | 4.3E-04 |
| | | | Dermal | ANTIMONY | 1.2E-03 | mg/L | 3.8E-07 | mg/kg-d | 6.0E-05 | mg/kg-d | 6.4E-03 |
| | | | Dermal | ARSENIC | 3.1E-02 | mg/L | 1.0E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.4E-02 |
| | | | Dermal | CADMIUM | 6.2E-04 | mg/L | 2.1E-07 | mg/kg-d | 2.5E-05 | mg/kg-d | 8.3E-03 |
| | | | Dermal | CHROMIUM | 4.5E-03 | mg/L | 1.5E-06 | mg/kg-d | 7.5E-05 | mg/kg-d | 2.0E-02 |
| | | | Dermal | COBALT | 1.0E-03 | mg/L | 1.4E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.5E-04 |
| | | | Dermal | CYANIDE | 2.0E-03 | mg/L | 6.7E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.1E-03 |
| | | | Dermal | IRON | 6.5E+00 | mg/L | 2.2E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 3.1E-03 |
| | | | Dermal | LEAD | 2.6E-02 | mg/L | 8.6E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 7.0E-02 | mg/L | 2.3E-05 | mg/kg-d | 9.6E-04 | mg/kg-d | 2.4E-02 |
| | | | Dermal | THALLIUM | 1.2E-03 | mg/L | 4.1E-07 | mg/kg-d | 1.0E-05 | mg/kg-d | 4.1E-02 |
| | | | Dermal | VANADIUM | 2.5E-03 | mg/L | 8.2E-07 | mg/kg-d | 1.3E-04 | mg/kg-d | 6.3E-03 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)PYRENE | 3.4E-05 | mg/L | 2.3E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.5E-02 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **2E-01** |
| **Exposure Point Total (BWL)** | | | | | | | | | | | **5E+00** |
| Sediment | Sediment | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.6E+04 | mg/kg | 6.2E-02 | mg/kg-d | 1.0E+00 | mg/kg-d | 6.2E-02 |
| | | | Ingestion | ANTIMONY | 2.0E+00 | mg/kg | 7.8E-06 | mg/kg-d | 4.0E-04 | mg/kg-d | 2.0E-02 |
| | | | Ingestion | ARSENIC | 8.8E+01 | mg/kg | 2.0E-04 | mg/kg-d | 3.0E-04 | mg/kg-d | 6.8E-01 |
| | | | Ingestion | CADMIUM | 7.7E+00 | mg/kg | 3.0E-05 | mg/kg-d | 1.0E-03 | mg/kg-d | 3.0E-02 |
| | | | Ingestion | CHROMIUM | 1.7E+02 | mg/kg | 6.6E-04 | mg/kg-d | 3.0E-03 | mg/kg-d | 2.2E-01 |
| | | | Ingestion | COBALT | 8.6E+00 | mg/kg | 3.3E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.1E-01 |
| | | | Ingestion | COPPER | 2.1E+02 | mg/kg | 8.0E-04 | mg/kg-d | 4.0E-02 | mg/kg-d | 2.0E-02 |
| | | | Ingestion | CYANIDE | 4.1E+00 | mg/kg | 1.6E-05 | mg/kg-d | 6.0E-04 | mg/kg-d | 2.6E-02 |
| | | | Ingestion | IRON | 2.7E+04 | mg/kg | 1.0E-01 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.5E-01 |
| | | | Ingestion | LEAD | 1.0E+03 | mg/kg | 3.9E-03 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 1.4E+02 | mg/kg | 5.4E-04 | mg/kg-d | 2.4E-02 | mg/kg-d | 2.3E-02 |
| | | | Ingestion | NICKEL | 3.7E+01 | mg/kg | 1.4E-04 | mg/kg-d | 2.0E-02 | mg/kg-d | 7.0E-03 |
| | | | Ingestion | THALLIUM | 4.7E-01 | mg/kg | 1.8E-06 | mg/kg-d | 1.0E-05 | mg/kg-d | 1.8E-01 |
| | | | Ingestion | VANADIUM | 2.6E+01 | mg/kg | 1.0E-04 | mg/kg-d | 5.0E-03 | mg/kg-d | 2.0E-02 |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | AROCLOR-1254 | 1.6E-01 | mg/kg | 6.3E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 3.1E-02 |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Sediment | Sediment | KWL | Ingestion | **SVOCs** | | | | | | | |
| | | | Ingestion | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 4.4E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 4.1E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.4E-02 |
| | | | Ingestion | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 5.3E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 4.6E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 6.3E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 1.6E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Ingestion]** | | | | | | | | **1.6E+00** |
| Sediment | Sediment | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.6E+04 | mg/kg | NA | mg/kg-d | 1.0E+00 | mg/kg-d | NA |
| | | | Dermal | ANTIMONY | 2.0E+00 | mg/kg | NA | mg/kg-d | 6.0E-05 | mg/kg-d | NA |
| | | | Dermal | ARSENIC | 8.8E+01 | mg/kg | 2.4E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 8.0E-02 |
| | | | Dermal | CADMIUM | 7.7E+00 | mg/kg | 7.0E-08 | mg/kg-d | 2.5E-05 | mg/kg-d | 2.8E-03 |
| | | | Dermal | CHROMIUM | 1.7E+02 | mg/kg | NA | mg/kg-d | 7.5E-05 | mg/kg-d | NA |
| | | | Dermal | COBALT | 8.6E+00 | mg/kg | NA | mg/kg-d | 3.0E-04 | mg/kg-d | NA |
| | | | Dermal | COPPER | 2.1E+02 | mg/kg | NA | mg/kg-d | 4.0E-02 | mg/kg-d | NA |
| | | | Dermal | CYANIDE | 4.1E+00 | mg/kg | NA | mg/kg-d | 6.0E-04 | mg/kg-d | NA |
| | | | Dermal | IRON | 2.7E+04 | mg/kg | NA | mg/kg-d | 7.0E-01 | mg/kg-d | NA |
| | | | Dermal | LEAD | 1.0E+03 | mg/kg | NA | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 1.4E+02 | mg/kg | NA | mg/kg-d | 9.6E-04 | mg/kg-d | NA |
| | | | Dermal | NICKEL | 3.7E+01 | mg/kg | NA | mg/kg-d | 8.0E-04 | mg/kg-d | NA |
| | | | Dermal | THALLIUM | 4.7E-01 | mg/kg | NA | mg/kg-d | 1.0E-05 | mg/kg-d | NA |
| | | | Dermal | VANADIUM | 2.6E+01 | mg/kg | NA | mg/kg-d | 1.3E-04 | mg/kg-d | NA |
| | | | Dermal | **PEST/PCB** | | | | | | | |
| | | | Dermal | AROCLOR-1254 | 1.6E-01 | mg/kg | 2.1E-07 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.0E-02 |
| | | | Dermal | **SVOCs** | | | | | | | |
| | | | Dermal | BENZO(A)ANTHRACENE | 1.1E+00 | mg/kg | 1.4E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(A)PYRENE | 1.1E+00 | mg/kg | 1.3E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 4.2E-03 |
| | | | Dermal | BENZO(B)FLUORANTHENE | 1.4E+00 | mg/kg | 1.6E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | BENZO(K)FLUORANTHENE | 1.2E+00 | mg/kg | 1.4E-06 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | DIBENZO(A,H)ANTHRACENE | 1.6E-01 | mg/kg | 1.9E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | INDENO(1,2,3-CD)PYRENE | 4.2E-01 | mg/kg | 4.9E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | **Exposure Route Total [Sediment-Dermal]** | | | | | | | | **9.8E-02** |

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Surface Water | Surface Water | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ALUMINUM | 1.4E+00 | mg/L | 8.6E-03 | mg/kg-d | 1.0E+00 | mg/kg-d | 8.6E-03 |
| | | | Ingestion | ANTIMONY | 3.7E-03 | mg/L | 2.3E-05 | mg/kg-d | 4.0E-04 | mg/kg-d | 5.8E-02 |
| | | | Ingestion | ARSENIC | 1.7E-02 | mg/L | 1.1E-04 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.5E-01 |
| | | | Ingestion | CHROMIUM | 5.3E-03 | mg/L | 3.4E-05 | mg/kg-d | 3.0E-03 | mg/kg-d | 1.1E-02 |
| | | | Ingestion | COBALT | 1.6E-03 | mg/L | 1.0E-05 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.4E-02 |
| | | | Ingestion | CYANIDE | 1.8E-03 | mg/L | 1.1E-05 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.9E-02 |
| | | | Ingestion | IRON | 3.6E+00 | mg/L | 2.3E-02 | mg/kg-d | 7.0E-01 | mg/kg-d | 3.2E-02 |
| | | | Ingestion | LEAD | 2.9E-02 | mg/L | 1.9E-04 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | MANGANESE | 8.0E-02 | mg/L | 5.0E-04 | mg/kg-d | 2.4E-02 | mg/kg-d | 2.1E-02 |
| | | | Ingestion | THALLIUM | 5.8E-03 | mg/L | 3.7E-05 | mg/kg-d | 1.0E-05 | mg/kg-d | 3.7E+00 |
| | | | **Exposure Route Total [Surface Water-Ingestion]** | | | | | | | | **4E+00** |
| Surface Water | Surface Water | KWL | Dermal | **Metals** | | | | | | | |
| | | | Dermal | ALUMINUM | 1.4E+00 | mg/L | 4.6E-04 | mg/kg-d | 1.0E+00 | mg/kg-d | 4.6E-04 |
| | | | Dermal | ANTIMONY | 3.7E-03 | mg/L | 1.2E-06 | mg/kg-d | 6.0E-05 | mg/kg-d | 2.1E-02 |
| | | | Dermal | ARSENIC | 1.7E-02 | mg/L | 5.6E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.9E-02 |
| | | | Dermal | CHROMIUM | 5.3E-03 | mg/L | 1.8E-06 | mg/kg-d | 7.5E-05 | mg/kg-d | 2.4E-02 |
| | | | Dermal | COBALT | 1.6E-03 | mg/L | 2.1E-07 | mg/kg-d | 3.0E-04 | mg/kg-d | 7.1E-04 |
| | | | Dermal | CYANIDE | 1.8E-03 | mg/L | 6.0E-07 | mg/kg-d | 6.0E-04 | mg/kg-d | 1.0E-03 |
| | | | Dermal | IRON | 3.6E+00 | mg/L | 1.2E-03 | mg/kg-d | 7.0E-01 | mg/kg-d | 1.7E-03 |
| | | | Dermal | LEAD | 2.9E-02 | mg/L | 9.8E-07 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Dermal | MANGANESE | 8.0E-02 | mg/L | 2.7E-05 | mg/kg-d | 9.6E-04 | mg/kg-d | 2.8E-02 |
| | | | Dermal | THALLIUM | 5.8E-03 | mg/L | 1.9E-06 | mg/kg-d | 1.0E-05 | mg/kg-d | 1.9E-01 |
| | | | **Exposure Route Total [Surface Water-Dermal]** | | | | | | | | **3E-01** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **6E+00** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

**Ingestion - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{\text{IR x FS x EF x ED x CF}}{\text{BW x AT}}$$

= 3.8E-06 (Child)

| | | |
|---|---|---|
| IR | Ingestion Rate (mg/day) | 200 |
| FS | Fraction from Contaminated Source | 1 |
| EF | Sediment Ingestion Exposure Frequency (days/year) | 105 |
| ED | Sediment Ingestion Exposure Duration (years) | 6 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 15 |
| AT | Averaging Time (days) | 2,190 |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{sediment} * IF * B$

(B) presented in Table 5.1

Non-cancer Hazard = Intake/RfD

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Swimmer |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |

**Dermal - Sediment (SD)**

$$\text{Intake Factor (IF)} = \frac{\text{SA x AF x EF x ED x CF}}{\text{BW x AT}}$$

| | | | |
|---|---|---|---|
| = | 9.1E-06 | (Child) | |

Intake$_{derm}$(mg/kg·d) = EPC$_{sediment}$*IF*ABS
(ABS) presented in Table 5.1
Non-cancer Hazard = Intake/RfD

| | | |
|---|---|---|
| SA | Surface Area Exposed to Sediment (cm²/day) | 2,373 |
| AF | Sediment Skin Adherence Factor (mg/cm²) | 0.2 |
| EF | Sediment Dermal Exposure Frequency (days/year) | 105 |
| ED | Sediment Dermal Exposure Duration (years) | 6 |
| CF | Conversion Factor (kg/mg) | 0.000001 |
| BW | Body Weight (kg) | 15 |
| AT | Averaging Time (days) | 2,190 |

**Ingestion - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{\text{IR x FR x ET x EF x ED}}{\text{BW x AT}}$$

| | | | |
|---|---|---|---|
| = | 6.3E-03 | (Child) | |

Intake$_{ing}$(mg/kg·d) = EPC$_{sw}$*IF
Non-cancer Hazard = Intake/RfD

| | | |
|---|---|---|
| IR | Ingestion Rate - Surface Water (L/hour) | 0.12 |
| FS | Fraction from Contaminated Source | 1 |
| ET | Surface Water Exposure Time (hours/day) | 2.7 |
| EF | Surface Water Ingestion Exposure Frequency (days/year) | 105 |
| ED | Surface Water Exposure Duration (years) | 6 |
| BW | Body Weight (kg) | 15 |
| AT | Averaging Time (days) | 2,190 |

**Dermal - Surface Water (SW)**

$$\text{Intake Factor (IF)} = \frac{\text{SA x EV x EF x ED}}{\text{BW x AT}}$$

| | | | |
|---|---|---|---|
| = | 1.2E+02 | (Child) | |

Intake$_{derm}$(mg/kg·d) = IF x Absorbed Dose per Event (DA$_{Event}$)
(DA$_{event}$) presented in Table 4.6
Non-cancer Hazard = Intake/RfD

| | | |
|---|---|---|
| SA | Surface Area Exposed to Surface Water (cm²) | 6,365 |
| EF | Surface Water Dermal Exposure Frequency (days/year) | 105 |
| ED | Surface Water Dermal Exposure Duration (years) | 6 |
| EV | Events per Day (events/day) | 1 |
| BW | Body Weight (kg) | 15 |
| AT | Averaging Time (days) | 2,190 |

**Table 7.16**
**Calculation of Chemical Non-cancer Hazards for Angler**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Angler |
| Receptor Age: | Adult |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Fish | Tissue | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ARSENIC | 1.0E-02 | mg/kg | 3.3E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.1E-02 |
| | | | Ingestion | CHROMIUM | 4.3E+00 | mg/kg | 1.4E-03 | mg/kg-d | 3.0E-03 | mg/kg-d | 4.7E-01 |
| | | | Ingestion | LEAD | 1.1E-01 | mg/kg | 3.6E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | 4,4'-DDD | 1.2E-02 | mg/kg | 3.9E-06 | mg/kg-d | 3.0E-05 | mg/kg-d | 1.3E-01 |
| | | | Ingestion | 4,4'-DDE | 1.5E-02 | mg/kg | 5.0E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.7E-02 |
| | | | Ingestion | AROCLOR-1254 | 5.4E-02 | mg/kg | 1.7E-05 | mg/kg-d | 2.0E-05 | mg/kg-d | 8.7E-01 |
| | | | Ingestion | AROCLOR-1260 | 2.2E-02 | mg/kg | 7.2E-06 | mg/kg-d | 2.0E-05 | mg/kg-d | 3.6E-01 |
| | | | **Exposure Route Total [Fish-Ingestion]** | | | | | | | | **2E+00** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **2E+00** |

Notes:
NA – Not Available.
Chromium risks were calculated using toxicity values for hexavalent chromium.

**Ingestion - Fish**

$$\text{Intake Factor (IF)} = \frac{\text{IR x EF x ED}}{\text{BW x AT}} = \text{3.3E-04 (Adult)}$$

| | | |
|---|---|---|
| IR | Fish Ingestion Rate (kg/day) | 0.026 |
| EF | Fish Ingestion Exposure Frequency (days/year) | 365 |
| ED | Exposure Duration (years) | 26 |
| BW | Body Weight (kg) | 80 |
| AT | Averaging Time (days) | 9,490 |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{fish} * IF$
Non-cancer Hazard = Intake/RfD

**Table 7.17**
**Calculation of Chemical Non-cancer Hazards for Angler**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Angler |
| Receptor Age: | Adolescent |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Intake/Exposure | | RfD/RfC | | |
| | | | | | Value | Units | Value | Units | Value | Units | |
| Fish | Tissue | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ARSENIC | 1.0E-02 | mg/kg | 3.9E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 1.3E-02 |
| | | | Ingestion | CHROMIUM | 4.3E+00 | mg/kg | 1.7E-03 | mg/kg-d | 3.0E-03 | mg/kg-d | 5.5E-01 |
| | | | Ingestion | LEAD | 1.1E-01 | mg/kg | 4.2E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | 4,4'-DDD | 1.2E-02 | mg/kg | 4.6E-06 | mg/kg-d | 3.0E-05 | mg/kg-d | 1.5E-01 |
| | | | Ingestion | 4,4'-DDE | 1.5E-02 | mg/kg | 5.9E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.0E-02 |
| | | | Ingestion | AROCLOR-1254 | 5.4E-02 | mg/kg | 2.1E-05 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.0E+00 |
| | | | Ingestion | AROCLOR-1260 | 2.2E-02 | mg/kg | 8.6E-06 | mg/kg-d | 2.0E-05 | mg/kg-d | 4.3E-01 |
| | | | **Exposure Route Total [Fish-Ingestion]** | | | | | | | | **2E+00** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **2E+00** |

Notes:
NA – Not Available.
Chromium risks were calculated using toxicity values for hexavalent chromium.

**Ingestion - Fish**

$$\text{Intake Factor (IF)} = \frac{\text{IR x EF x ED}}{\text{BW x AT}}$$

| | | |
|---|---|---|
| = | 3.8E-04 (Adolescent) | |
| IR | Fish Ingestion Rate (kg/day) | 0.017 |
| EF | Fish Ingestion Exposure Frequency (days/year) | 365 |
| ED | Exposure Duration (years) | 10 |
| BW | Body Weight (kg) | 44 |
| AT | Averaging Time (days) | 3,650 |

$Intake_{ing}(mg/kg{\cdot}d) = EPC_{fish} * IF$
Non-cancer Hazard = Intake/RfD

**Table 7.18**
**Calculation of Chemical Non-cancer Hazards for Angler**
**Reasonable Maximum Exposure**

| | |
|---|---|
| Scenario Timeframe: | Future |
| Receptor Population: | Angler |
| Receptor Age: | Child |

| Medium | Exposure Medium | Exposure Point | Exposure Route | Chemical of Potential Concern | EPC | | Non-cancer Hazard Calculations | | | | Non-cancer Hazards |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Value | Units | Intake/Exposure | | RfD/RfC | | |
| | | | | | | | Value | Units | Value | Units | |
| Fish | Tissue | KWL | Ingestion | **Metals** | | | | | | | |
| | | | Ingestion | ARSENIC | 1.0E-02 | mg/kg | 6.1E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 2.0E-02 |
| | | | Ingestion | CHROMIUM | 4.3E+00 | mg/kg | 2.6E-03 | mg/kg-d | 3.0E-03 | mg/kg-d | 8.6E-01 |
| | | | Ingestion | LEAD | 1.1E-01 | mg/kg | 6.6E-05 | mg/kg-d | NA | mg/kg-d | NA |
| | | | Ingestion | **PEST/PCB** | | | | | | | |
| | | | Ingestion | 4,4'-DDD | 1.2E-02 | mg/kg | 7.1E-06 | mg/kg-d | 3.0E-05 | mg/kg-d | 2.4E-01 |
| | | | Ingestion | 4,4'-DDE | 1.5E-02 | mg/kg | 9.2E-06 | mg/kg-d | 3.0E-04 | mg/kg-d | 3.1E-02 |
| | | | Ingestion | AROCLOR-1254 | 5.4E-02 | mg/kg | 3.2E-05 | mg/kg-d | 2.0E-05 | mg/kg-d | 1.6E+00 |
| | | | Ingestion | AROCLOR-1260 | 2.2E-02 | mg/kg | 1.3E-05 | mg/kg-d | 2.0E-05 | mg/kg-d | 6.7E-01 |
| | | | **Exposure Route Total [Fish-Ingestion]** | | | | | | | | **3E+00** |
| **Exposure Point Total (KWL)** | | | | | | | | | | | **3E+00** |

Notes:

NA – Not Available.

Chromium risks were calculated using toxicity values for hexavalent chromium.

**Ingestion - Fish**

$$\text{Intake Factor (IF)} = \frac{\text{IR x EF x ED}}{\text{BW x AT}} = \text{6.0E-04 (Child)}$$

$\text{Intake}_{ing}(mg/kg{\cdot}d) = \text{EPC}_{fish} * \text{IF}$

Non-cancer Hazard = Intake/RfD

| | | |
|---|---|---|
| IR | Fish Ingestion Rate (kg/day) | 0.009 |
| EF | Fish Ingestion Exposure Frequency (days/year) | 365 |
| ED | Exposure Duration (years) | 6 |
| BW | Body Weight (kg) | 15 |
| AT | Averaging Time (days) | 2,190 |

**Table 9.1**
**Chemical Cancer Risks and Non-cancer Hazards**
**Reasonable Maximum Exposure**
**Recreator - Adult**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Sediment | Sediment | SL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 4.5E-04 | NA | | **4.5E-04** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 8.5E-04 | NA | | **8.5E-04** | Hematological | NA |
| | | | ARSENIC | 5.0E-07 | 3.0E-07 | | **7.9E-07** | 3.0E-03 | 1.8E-03 | | **4.8E-03** | Skin | Respiratory |
| | | | CHROMIUM | 4.5E-07 | NA | | **4.5E-07** | 8.0E-04 | NA | | **8.0E-04** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 3.1E-03 | NA | | **3.1E-03** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 3.8E-04 | NA | | **3.8E-04** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 6.7E-04 | NA | | **6.7E-04** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 1.7E-03 | NA | | **1.7E-03** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 6.9E-04 | NA | | **6.9E-04** | Nervous system | Nervous system |
| | | | THALLIUM | NA | NA | | **NA** | 1.3E-02 | NA | | **1.3E-02** | Skin | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 7.3E-09 | 1.2E-08 | | **2.0E-08** | 4.9E-04 | 8.3E-04 | | **1.3E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 1.1E-07 | 1.7E-07 | | **2.8E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 8.2E-07 | 1.3E-06 | | **2.1E-06** | 7.4E-03 | 1.2E-02 | | **1.9E-02** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 1.7E-07 | 2.6E-07 | | **4.2E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 3.5E-09 | 5.5E-09 | | **9.0E-09** | NA | NA | | **NA** | NA | NA |
| | | | CHRYSENE | 1.7E-09 | 2.6E-09 | | **4.3E-09** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 8.4E-08 | 1.3E-07 | | **2.2E-07** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 2.3E-08 | 3.6E-08 | | **5.8E-08** | NA | NA | | **NA** | NA | NA |
| | | | **TICs** | | | | | | | | | | |
| | | | BENZO[J]FLUORANTHENE | 8.1E-07 | 1.3E-06 | | **2.1E-06** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | SL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | | 4.0E-08 | | **4.0E-08** | | 2.4E-04 | | **2.4E-04** | Skin | Respiratory |
| | | | CHROMIUM | | 1.7E-07 | | **1.7E-07** | | 3.1E-04 | | **3.1E-04** | None Observed | Respiratory |
| | | | COBALT | | NA | | **NA** | | 2.6E-05 | | **2.6E-05** | Endocrine | Endocrine |
| | | | CYANIDE | | NA | | **NA** | | 6.7E-05 | | **6.7E-05** | Reproductive | Endocrine |
| | | | IRON | | NA | | **NA** | | 1.5E-04 | | **1.5E-04** | Gastrointestinal | NA |
| | | | MANGANESE | | NA | | **NA** | | 9.0E-03 | | **9.0E-03** | Nervous system | Nervous system |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | | 4.9E-08 | | **4.9E-08** | | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | | 2.2E-06 | | **2.2E-06** | | 2.0E-02 | | **2.0E-02** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | | 8.6E-08 | | **8.6E-08** | | NA | | **NA** | NA | NA |
| | | | BIS(2-ETHYLHEXYL) PHTHALATE | | 8.6E-07 | | **8.6E-07** | | 8.3E-03 | | **8.3E-03** | Hepatic | NA |
| | | | DIBENZO(A,H)ANTHRACENE | | 7.2E-07 | | **7.2E-07** | | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | | 1.2E-07 | | **1.2E-07** | | NA | | **NA** | NA | NA |
| **Exposure Point Total - SL** | | | | 3.0E-06 | 7.7E-06 | 0.0E+00 | **1E-05** | 3.2E-02 | 5.2E-02 | 0.0E+00 | **8E-02** | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| | | | | | | | | **Total Organ HI (SL)** | | | | | |
| | | | | | | | | Developmental | | | 4E-02 | | |
| | | | | | | | | Endocrine | | | 3E-03 | | |
| | | | | | | | | Gastrointestinal | | | 2E-03 | | |
| | | | | | | | | Hematological | | | 9E-04 | | |
| | | | | | | | | Hepatic | | | 8E-03 | | |
| | | | | | | | | Immunological | | | 1E-03 | | |
| | | | | | | | | Nervous System | | | 1E-02 | | |
| | | | | | | | | None Observed | | | 1E-03 | | |
| | | | | | | | | Reproductive | | | 7E-04 | | |
| | | | | | | | | Skin | | | 2E-02 | | |
| Soil | Soil | BWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | NA | **NA** | 2.0E-03 | NA | 3.2E-05 | **2.0E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | NA | **NA** | 1.8E-03 | NA | NA | **1.8E-03** | Hematological | NA |
| | | | ARSENIC | 2.0E-05 | 4.2E-06 | 7.8E-09 | **2.4E-05** | 1.2E-01 | 2.5E-02 | 3.2E-04 | **1.4E-01** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | 6.5E-11 | **6.5E-11** | 1.2E-03 | 2.0E-04 | 9.7E-06 | **1.4E-03** | Renal | Renal |
| | | | CHROMIUM | 3.8E-06 | NA | 5.3E-08 | **3.9E-06** | 6.9E-03 | NA | 1.7E-05 | **6.9E-03** | None Observed | Respiratory |
| | | | COBALT | NA | NA | 1.5E-10 | **1.5E-10** | 1.9E-03 | NA | 7.7E-06 | **1.9E-03** | Endocrine | Endocrine |
| | | | CYANIDE | NA | NA | NA | **NA** | 5.1E-04 | NA | 1.4E-03 | **1.9E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | NA | **NA** | 4.6E-03 | NA | NA | **4.6E-03** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | NA | **NA** | NA | NA | NA | **NA** | NA | NA |
| | | | THALLIUM | NA | NA | NA | **NA** | 4.4E-02 | NA | NA | **4.4E-02** | Skin | NA |
| | | | VANADIUM | NA | NA | NA | **NA** | 1.3E-03 | NA | 5.3E-06 | **1.3E-03** | Systemic | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 2.6E-08 | 1.4E-08 | 1.3E-12 | **4.0E-08** | 2.3E-04 | 1.3E-04 | 2.9E-06 | **3.6E-04** | Developmental | Developmental |
| Sediment | Sediment | BWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 2.2E-03 | NA | | **2.2E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 2.7E-03 | NA | | **2.7E-03** | Hematological | NA |
| | | | ARSENIC | 1.4E-05 | 8.6E-06 | | **2.3E-05** | 8.5E-02 | 5.2E-02 | | **1.4E-01** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | | **NA** | 2.0E-03 | 9.7E-04 | | **3.0E-03** | Renal | Renal |
| | | | CHROMIUM | 4.3E-06 | NA | | **4.3E-06** | 7.8E-03 | NA | | **7.8E-03** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 8.4E-03 | NA | | **8.4E-03** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 6.6E-04 | NA | | **6.6E-04** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 3.8E-03 | NA | | **3.8E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 9.1E-03 | NA | | **9.1E-03** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 6.9E-04 | NA | | **6.9E-04** | Nervous system | Nervous system |
| | | | VANADIUM | NA | NA | | **NA** | 1.7E-03 | NA | | **1.7E-03** | Systemic | Respiratory |
| | | | ZINC | NA | NA | | **NA** | 5.6E-04 | NA | | **5.6E-04** | Hematological | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 9.0E-09 | 1.5E-08 | | **2.4E-08** | 6.0E-04 | 1.0E-03 | | **1.6E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 7.5E-09 | 1.2E-08 | | **1.9E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 7.7E-08 | 1.2E-07 | | **2.0E-07** | 6.9E-04 | 1.1E-03 | | **1.8E-03** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 1.1E-08 | 1.8E-08 | | **2.9E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 1.1E-09 | 1.7E-09 | | **2.8E-09** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 1.6E-08 | 2.5E-08 | | **4.1E-08** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 4.2E-09 | 6.5E-09 | | **1.1E-08** | NA | NA | | **NA** | NA | NA |
| | | | NAPHTHALENE | NA | NA | | **NA** | 2.1E-05 | 3.4E-05 | | **5.5E-05** | Systemic | Respiratory |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Sediment | Sediment | BWL | **VOCs** | | | | | | | | | | |
| | | | TRICHLOROETHYLENE (TCE) | 1.7E-10 | NA | | **1.7E-10** | 2.0E-05 | NA | | **2.0E-05** | Developmental | Developmental |
| | | | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | | NA | | **NA** | | 1.2E-05 | | **1.2E-05** | Nervous system | Nervous system |
| | | | ANTIMONY | | NA | | **NA** | | 1.7E-04 | | **1.7E-04** | Hematological | NA |
| | | | ARSENIC | | 1.5E-07 | | **1.5E-07** | | 9.3E-04 | | **9.3E-04** | Skin | Respiratory |
| | | | CADMIUM | | NA | | **NA** | | 2.3E-04 | | **2.3E-04** | Renal | Renal |
| | | | CHROMIUM | | 3.0E-07 | | **3.0E-07** | | 5.4E-04 | | **5.4E-04** | None Observed | Respiratory |
| | | | COBALT | | NA | | **NA** | | 1.2E-05 | | **1.2E-05** | Endocrine | Endocrine |
| | | | CYANIDE | | NA | | **NA** | | 3.0E-05 | | **3.0E-05** | Reproductive | Endocrine |
| | | | IRON | | NA | | **NA** | | 8.4E-05 | | **8.4E-05** | Gastrointestinal | NA |
| | | | LEAD | | NA | | **NA** | | NA | | **NA** | NA | NA |
| | | | MANGANESE | | NA | | **NA** | | 6.6E-04 | | **6.6E-04** | Nervous system | Nervous system |
| | | | THALLIUM | | NA | | **NA** | | 1.1E-03 | | **1.1E-03** | Skin | NA |
| | | | VANADIUM | | NA | | **NA** | | 1.7E-04 | | **1.7E-04** | Systemic | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | | 3.8E-07 | | **3.8E-07** | | 3.4E-03 | | **3.4E-03** | Developmental | Developmental |
| **Exposure Point Total - BWL** | | | | 4.2E-05 | 1.4E-05 | 6.1E-08 | **6E-05** | 3.1E-01 | 8.7E-02 | 1.8E-03 | **4E-01** | | |
| | | | | | | | | **Total Organ HI (BWL)** | | | | | |
| | | | | | | | | Developmental | | | 6E-03 | | |
| | | | | | | | | Endocrine | | | 1E-02 | | |
| | | | | | | | | Gastrointestinal | | | 1E-02 | | |
| | | | | | | | | Hematological | | | 5E-03 | | |
| | | | | | | | | Immunological | | | 2E-03 | | |
| | | | | | | | | Nervous System | | | 6E-03 | | |
| | | | | | | | | None Observed | | | 2E-02 | | |
| | | | | | | | | Renal | | | 5E-03 | | |
| | | | | | | | | Reproductive | | | 4E-03 | | |
| | | | | | | | | Respiratory | | | 3E-04 | | |
| | | | | | | | | Skin | | | 3E-01 | | |
| | | | | | | | | Systemic | | | 3E-03 | | |
| Soil | Soil | HC | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | NA | **NA** | 4.7E-03 | NA | 7.8E-05 | **4.8E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | NA | **NA** | 6.8E-03 | NA | NA | **6.8E-03** | Hematological | NA |
| | | | ARSENIC | 8.5E-05 | 1.8E-05 | 3.4E-08 | **1.0E-04** | 5.1E-01 | 1.1E-01 | 1.4E-03 | **6.2E-01** | Skin | Respiratory |
| | | | BARIUM | NA | NA | NA | **NA** | 5.0E-03 | NA | 1.6E-04 | **5.2E-03** | Renal | Reproductive |
| | | | CADMIUM | NA | NA | 8.2E-11 | **8.2E-11** | 1.5E-03 | 2.5E-04 | 1.2E-05 | **1.8E-03** | Renal | Renal |
| | | | CHROMIUM | 6.1E-05 | NA | 8.5E-07 | **6.2E-05** | 1.1E-01 | NA | 2.7E-04 | **1.1E-01** | None Observed | Respiratory |
| | | | COBALT | NA | NA | 8.9E-10 | **8.9E-10** | 1.1E-02 | NA | 4.4E-05 | **1.1E-02** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | NA | **NA** | 1.8E-03 | NA | NA | **1.8E-03** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | NA | **NA** | 4.2E-02 | NA | 1.1E-01 | **1.5E-01** | Reproductive | Endocrine |
| | | | IRON | NA | NA | NA | **NA** | 2.0E-02 | NA | NA | **2.0E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | NA | **NA** | NA | NA | NA | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | NA | **NA** | 7.2E-03 | NA | 2.9E-04 | **7.5E-03** | Nervous system | Nervous system |
| | | | MERCURY | NA | NA | NA | **NA** | 1.3E-03 | NA | 1.1E-07 | **1.3E-03** | Immunological | Nervous system |
| | | | NICKEL | NA | NA | 5.6E-11 | **5.6E-11** | 3.5E-04 | NA | 6.4E-06 | **3.6E-04** | Systemic | Respiratory |
| | | | THALLIUM | NA | NA | NA | **NA** | 3.4E-02 | NA | NA | **3.4E-02** | Skin | NA |
| | | | VANADIUM | NA | NA | NA | **NA** | 3.1E-03 | NA | 1.3E-05 | **3.1E-03** | Systemic | Respiratory |
| | | | ZINC | NA | NA | NA | **NA** | 9.1E-04 | NA | NA | **9.1E-04** | Hematological | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 2.1E-08 | 1.2E-08 | 1.5E-09 | **3.5E-08** | 1.4E-03 | 8.3E-04 | NA | **2.2E-03** | Immunological | NA |
| | | | AROCLOR-1260 | 6.3E-08 | 3.7E-08 | 2.8E-09 | **1.0E-07** | 4.2E-03 | 2.5E-03 | NA | **6.7E-03** | Immunological | NA |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Soil | Soil | HC | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 3.0E-08 | 1.7E-08 | 8.6E-10 | **4.8E-08** | NA | NA | NA | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 3.3E-07 | 1.8E-07 | 1.7E-11 | **5.2E-07** | 3.0E-03 | 1.6E-03 | 3.7E-05 | **4.7E-03** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 3.8E-08 | 2.1E-08 | 1.9E-12 | **6.0E-08** | NA | NA | NA | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 3.5E-09 | 1.9E-09 | 1.7E-13 | **5.5E-09** | NA | NA | NA | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 5.6E-08 | 3.1E-08 | 2.8E-12 | **8.7E-08** | NA | NA | NA | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 1.5E-08 | 8.1E-09 | 7.3E-13 | **2.3E-08** | NA | NA | NA | **NA** | NA | NA |
| | | | NAPHTHALENE | NA | NA | 7.8E-09 | **7.8E-09** | 6.8E-06 | 3.8E-06 | 2.0E-04 | **2.2E-04** | Systemic | Respiratory |
| Sediment | Sediment | HC | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 1.3E-03 | NA | | **1.3E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 9.2E-04 | NA | | **9.2E-04** | Hematological | NA |
| | | | ARSENIC | 1.9E-05 | 1.2E-05 | | **3.1E-05** | 1.2E-01 | 7.0E-02 | | **1.9E-01** | Skin | Respiratory |
| | | | BARIUM | NA | NA | | **NA** | 7.6E-04 | NA | | **7.6E-04** | Renal | Reproductive |
| | | | CADMIUM | NA | NA | | **NA** | 6.8E-04 | 3.3E-04 | | **1.0E-03** | Renal | Renal |
| | | | CHROMIUM | 1.2E-05 | NA | | **1.2E-05** | 2.2E-02 | NA | | **2.2E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 2.5E-03 | NA | | **2.5E-03** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 6.4E-04 | NA | | **6.4E-04** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 1.2E-02 | NA | | **1.2E-02** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 3.7E-03 | NA | | **3.7E-03** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 5.1E-04 | NA | | **5.1E-04** | Nervous system | Nervous system |
| | | | NICKEL | NA | NA | | **NA** | 2.5E-04 | NA | | **2.5E-04** | Systemic | Respiratory |
| | | | THALLIUM | NA | NA | | **NA** | 2.5E-02 | NA | | **2.5E-02** | Skin | NA |
| | | | VANADIUM | NA | NA | | **NA** | 7.3E-04 | NA | | **7.3E-04** | Systemic | Respiratory |
| | | | ZINC | NA | NA | | **NA** | 2.4E-04 | NA | | **2.4E-04** | Hematological | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 1.5E-08 | 2.6E-08 | | **4.1E-08** | 1.0E-03 | 1.7E-03 | | **2.7E-03** | Immunological | NA |
| | | | AROCLOR-1260 | 6.5E-09 | 1.1E-08 | | **1.7E-08** | 4.4E-04 | 7.4E-04 | | **1.2E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 4.0E-09 | 6.2E-09 | | **1.0E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 3.9E-08 | 6.1E-08 | | **1.0E-07** | 3.5E-04 | 5.5E-04 | | **9.0E-04** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 5.3E-09 | 8.3E-09 | | **1.4E-08** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 1.1E-08 | 1.7E-08 | | **2.7E-08** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 2.2E-09 | 3.4E-09 | | **5.6E-09** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | HC | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | | NA | | **NA** | | 5.6E-05 | | **5.6E-05** | Nervous system | Nervous system |
| | | | ANTIMONY | | NA | | **NA** | | 5.1E-04 | | **5.1E-04** | Hematological | NA |
| | | | ARSENIC | | 5.5E-07 | | **5.5E-07** | | 3.3E-03 | | **3.3E-03** | Skin | Respiratory |
| | | | BARIUM | | NA | | **NA** | | 2.9E-04 | | **2.9E-04** | Renal | Reproductive |
| | | | CADMIUM | | NA | | **NA** | | 9.1E-04 | | **9.1E-04** | Renal | Renal |
| | | | CHROMIUM | | 7.9E-06 | | **7.9E-06** | | 1.4E-02 | | **1.4E-02** | None Observed | Respiratory |
| | | | COBALT | | NA | | **NA** | | 3.3E-05 | | **3.3E-05** | Endocrine | Endocrine |
| | | | COPPER | | NA | | **NA** | | 6.4E-06 | | **6.4E-06** | Gastrointestinal | NA |
| | | | CYANIDE | | NA | | **NA** | | 1.3E-04 | | **1.3E-04** | Reproductive | Endocrine |
| | | | IRON | | NA | | **NA** | | 1.8E-04 | | **1.8E-04** | Gastrointestinal | NA |
| | | | LEAD | | NA | | **NA** | | NA | | **NA** | NA | NA |
| | | | MANGANESE | | NA | | **NA** | | 1.5E-03 | | **1.5E-03** | Nervous system | Nervous system |
| | | | MERCURY | | NA | | **NA** | | 8.7E-05 | | **8.7E-05** | Immunological | Nervous system |
| | | | THALLIUM | | NA | | **NA** | | 4.9E-03 | | **4.9E-03** | Skin | NA |
| | | | VANADIUM | | NA | | **NA** | | 3.6E-04 | | **3.6E-04** | Systemic | Respiratory |
| | | | ZINC | | NA | | **NA** | | 8.7E-06 | | **8.7E-06** | Hematological | NA |
| **Exposure Point Total - HC** | | | | 1.8E-04 | 3.9E-05 | 9.0E-07 | **2E-04** | 9.6E-01 | 2.1E-01 | 1.1E-01 | **1E+00** | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| | | | | | | | | **Total Organ HI (HC)** | | | | | |
| | | | | | | | | Developmental | | | 6E-03 | | |
| | | | | | | | | Endocrine | | | 1E-01 | | |
| | | | | | | | | Gastrointestinal | | | 3E-02 | | |
| | | | | | | | | Hematological | | | 9E-03 | | |
| | | | | | | | | Immunological | | | 1E-02 | | |
| | | | | | | | | Nervous System | | | 2E-02 | | |
| | | | | | | | | None Observed | | | 1E-01 | | |
| | | | | | | | | Renal | | | 1E-02 | | |
| | | | | | | | | Reproductive | | | 5E-02 | | |
| | | | | | | | | Respiratory | | | 2E-03 | | |
| | | | | | | | | Skin | | | 9E-01 | | |
| | | | | | | | | Systemic | | | 5E-03 | | |
| Soil | Soil | KWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | NA | **NA** | 2.4E-03 | NA | 3.9E-05 | **2.4E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | NA | **NA** | 4.6E-03 | NA | NA | **4.6E-03** | Hematological | NA |
| | | | ARSENIC | 1.4E-06 | 3.1E-07 | 5.7E-10 | **1.8E-06** | 8.6E-03 | 1.8E-03 | 2.4E-05 | **1.0E-02** | Skin | Respiratory |
| | | | CHROMIUM | 1.8E-06 | NA | 2.4E-08 | **1.8E-06** | 3.2E-03 | NA | 7.8E-06 | **3.2E-03** | None Observed | Respiratory |
| | | | COBALT | NA | NA | 1.2E-10 | **1.2E-10** | 1.5E-03 | NA | 6.1E-06 | **1.5E-03** | Endocrine | Endocrine |
| | | | CYANIDE | NA | NA | NA | **NA** | 3.2E-04 | NA | 8.4E-04 | **1.2E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | NA | **NA** | 5.8E-03 | NA | NA | **5.8E-03** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | NA | **NA** | NA | NA | NA | **NA** | NA | NA |
| | | | THALLIUM | NA | NA | NA | **NA** | 2.3E-02 | NA | NA | **2.3E-02** | Skin | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 2.4E-08 | 1.3E-08 | 1.2E-12 | **3.8E-08** | 2.2E-04 | 1.2E-04 | 2.7E-06 | **3.4E-04** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 4.9E-09 | 2.7E-09 | 2.4E-13 | **7.6E-09** | NA | NA | NA | **NA** | NA | NA |
| Sediment | Sediment | KWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 2.4E-03 | NA | | **2.4E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 7.7E-04 | NA | | **7.7E-04** | Hematological | NA |
| | | | ARSENIC | 4.4E-06 | 2.7E-06 | | **7.1E-06** | 2.7E-02 | 1.6E-02 | | **4.3E-02** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | | **NA** | 1.2E-03 | 5.6E-04 | | **1.7E-03** | Renal | Renal |
| | | | CHROMIUM | 4.8E-06 | NA | | **4.8E-06** | 8.7E-03 | NA | | **8.7E-03** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 4.3E-03 | NA | | **4.3E-03** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 7.9E-04 | NA | | **7.9E-04** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 1.0E-03 | NA | | **1.0E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 5.7E-03 | NA | | **5.7E-03** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 8.9E-04 | NA | | **8.9E-04** | Nervous system | Nervous system |
| | | | NICKEL | NA | NA | | **NA** | 2.8E-04 | NA | | **2.8E-04** | Systemic | Respiratory |
| | | | THALLIUM | NA | NA | | **NA** | 7.0E-03 | NA | | **7.0E-03** | Skin | NA |
| | | | VANADIUM | NA | NA | | **NA** | 7.9E-04 | NA | | **7.9E-04** | Systemic | Respiratory |
| Sediment | Sediment | KWL | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 1.8E-08 | 3.1E-08 | | **4.9E-08** | 1.2E-03 | 2.1E-03 | | **3.3E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 6.4E-09 | 1.0E-08 | | **1.6E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 6.0E-08 | 9.4E-08 | | **1.5E-07** | 5.4E-04 | 8.4E-04 | | **1.4E-03** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 7.8E-09 | 1.2E-08 | | **2.0E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 6.8E-10 | 1.1E-09 | | **1.7E-09** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 9.1E-09 | 1.4E-08 | | **2.3E-08** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 2.3E-09 | 3.6E-09 | | **6.0E-09** | NA | NA | | **NA** | NA | NA |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Surface Water | Surface Water | KWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | | NA | | **NA** | | 1.2E-05 | | **1.2E-05** | Nervous system | Nervous system |
| | | | ANTIMONY | | NA | | **NA** | | 5.6E-04 | | **5.6E-04** | Hematological | NA |
| | | | ARSENIC | | 8.5E-08 | | **8.5E-08** | | 5.1E-04 | | **5.1E-04** | Skin | Respiratory |
| | | | CHROMIUM | | 3.6E-07 | | **3.6E-07** | | 6.5E-04 | | **6.5E-04** | None Observed | Respiratory |
| | | | COBALT | | NA | | **NA** | | 1.9E-05 | | **1.9E-05** | Endocrine | Endocrine |
| | | | CYANIDE | | NA | | **NA** | | 2.7E-05 | | **2.7E-05** | Reproductive | Endocrine |
| | | | IRON | | NA | | **NA** | | 4.7E-05 | | **4.7E-05** | Gastrointestinal | NA |
| | | | LEAD | | NA | | **NA** | | NA | | **NA** | NA | NA |
| | | | MANGANESE | | NA | | **NA** | | 7.5E-04 | | **7.5E-04** | Nervous system | Nervous system |
| | | | THALLIUM | | NA | | **NA** | | 5.3E-03 | | **5.3E-03** | Skin | NA |
| **Exposure Point Total - KWL** | | | | 1.3E-05 | 3.6E-06 | 2.5E-08 | **2E-05** | 1.1E-01 | 2.9E-02 | 9.2E-04 | **1E-01** | | |
| | | | | | | | | **Total Organ HI (KWL)** | | | | | |
| | | | | | | | | Developmental | | | 2E-03 | | |
| | | | | | | | | Endocrine | | | 7E-03 | | |
| | | | | | | | | Gastrointestinal | | | 1E-02 | | |
| | | | | | | | | Hematological | | | 6E-03 | | |
| | | | | | | | | Immunological | | | 3E-03 | | |
| | | | | | | | | Nervous System | | | 6E-03 | | |
| | | | | | | | | None Observed | | | 1E-02 | | |
| | | | | | | | | Renal | | | 2E-03 | | |
| | | | | | | | | Reproductive | | | 1E-03 | | |
| | | | | | | | | Respiratory | | | 3E-05 | | |
| | | | | | | | | Skin | | | 9E-02 | | |
| | | | | | | | | Systemic | | | 1E-03 | | |

**Table 9.2**
**Chemical Cancer Risks and Non-cancer Hazards**
**Reasonable Maximum Exposure**
**Recreator - Adolescent**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Sediment | Sediment | SL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 8.1E-04 | NA | | **8.1E-04** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 1.5E-03 | NA | | **1.5E-03** | Hematological | NA |
| | | | ARSENIC | 3.4E-07 | 1.6E-07 | | **5.0E-07** | 5.4E-03 | 2.5E-03 | | **7.8E-03** | Skin | Respiratory |
| | | | CHROMIUM | 9.3E-07 | NA | | **9.3E-07** | 1.5E-03 | NA | | **1.5E-03** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 5.6E-03 | NA | | **5.6E-03** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 6.9E-04 | NA | | **6.9E-04** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 1.2E-03 | NA | | **1.2E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 3.1E-03 | NA | | **3.1E-03** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 1.2E-03 | NA | | **1.2E-03** | Nervous system | Nervous system |
| | | | THALLIUM | NA | NA | | **NA** | 2.3E-02 | NA | | **2.3E-02** | Skin | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 5.1E-09 | 6.6E-09 | | **1.2E-08** | 8.8E-04 | 1.1E-03 | | **2.0E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 2.3E-07 | 2.8E-07 | | **5.1E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 1.7E-06 | 2.1E-06 | | **3.8E-06** | 1.3E-02 | 1.6E-02 | | **2.9E-02** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 3.4E-07 | 4.2E-07 | | **7.6E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 7.3E-09 | 8.8E-09 | | **1.6E-08** | NA | NA | | **NA** | NA | NA |
| | | | CHRYSENE | 3.5E-09 | 4.2E-09 | | **7.6E-09** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 1.7E-07 | 2.1E-07 | | **3.9E-07** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 4.7E-08 | 5.7E-08 | | **1.0E-07** | NA | NA | | **NA** | NA | NA |
| | | | **TICs** | | | | | | | | | | |
| | | | BENZO[J]FLUORANTHENE | 5.6E-07 | 6.8E-07 | | **1.2E-06** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | SL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | | 2.1E-08 | | **2.1E-08** | | 3.3E-04 | | **3.3E-04** | Skin | Respiratory |
| | | | CHROMIUM | | 2.8E-07 | | **2.8E-07** | | 4.3E-04 | | **4.3E-04** | None Observed | Respiratory |
| | | | COBALT | | NA | | **NA** | | 3.6E-05 | | **3.6E-05** | Endocrine | Endocrine |
| | | | CYANIDE | | NA | | **NA** | | 9.3E-05 | | **9.3E-05** | Reproductive | Endocrine |
| | | | IRON | | NA | | **NA** | | 2.0E-04 | | **2.0E-04** | Gastrointestinal | NA |
| | | | MANGANESE | | NA | | **NA** | | 1.2E-02 | | **1.2E-02** | Nervous system | Nervous system |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | | 7.9E-08 | | **7.9E-08** | | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | | 3.5E-06 | | **3.5E-06** | | 2.8E-02 | | **2.8E-02** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | | 1.4E-07 | | **1.4E-07** | | NA | | **NA** | NA | NA |
| | | | BIS(2-ETHYLHEXYL) PHTHALATE | | 4.6E-07 | | **4.6E-07** | | 1.1E-02 | | **1.1E-02** | Hepatic | NA |
| | | | DIBENZO(A,H)ANTHRACENE | | 1.2E-06 | | **1.2E-06** | | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | | 1.9E-07 | | **1.9E-07** | | NA | | **NA** | NA | NA |
| **Exposure Point Total - SL** | | | | 4.4E-06 | 9.7E-06 | 0.0E+00 | **1E-05** | 5.9E-02 | 7.2E-02 | 0.0E+00 | **1E-01** | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| | | | | | | | | **Total Organ HI (SL)** | | | | | |
| | | | | | | | | Developmental | | | 6E-02 | | |
| | | | | | | | | Endocrine | | | 6E-03 | | |
| | | | | | | | | Gastrointestinal | | | 4E-03 | | |
| | | | | | | | | Hematological | | | 2E-03 | | |
| | | | | | | | | Hepatic | | | 1E-02 | | |
| | | | | | | | | Immunological | | | 2E-03 | | |
| | | | | | | | | Nervous System | | | 1E-02 | | |
| | | | | | | | | None Observed | | | 2E-03 | | |
| | | | | | | | | Reproductive | | | 1E-03 | | |
| | | | | | | | | Skin | | | 3E-02 | | |
| Soil | Soil | BWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | NA | **NA** | 3.5E-03 | NA | 3.2E-05 | **3.6E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | NA | **NA** | 3.3E-03 | NA | NA | **3.3E-03** | Hematological | NA |
| | | | ARSENIC | 1.4E-05 | 2.2E-06 | 3.0E-09 | **1.6E-05** | 2.1E-01 | 3.5E-02 | 3.2E-04 | **2.5E-01** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | 2.5E-11 | **2.5E-11** | 2.1E-03 | 2.8E-04 | 9.7E-06 | **2.4E-03** | Renal | Renal |
| | | | CHROMIUM | 8.0E-06 | NA | 6.1E-08 | **8.1E-06** | 1.2E-02 | NA | 1.7E-05 | **1.2E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | 5.9E-11 | **5.9E-11** | 3.4E-03 | NA | 7.7E-06 | **3.4E-03** | Endocrine | Endocrine |
| | | | CYANIDE | NA | NA | NA | **NA** | 9.2E-04 | NA | 1.4E-03 | **2.3E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | NA | **NA** | 8.3E-03 | NA | NA | **8.3E-03** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | NA | **NA** | NA | NA | NA | **NA** | NA | NA |
| | | | THALLIUM | NA | NA | NA | **NA** | 7.9E-02 | NA | NA | **7.9E-02** | Skin | NA |
| | | | VANADIUM | NA | NA | NA | **NA** | 2.3E-03 | NA | 5.3E-06 | **2.3E-03** | Systemic | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 5.4E-08 | 2.3E-08 | 1.5E-12 | **7.6E-08** | 4.2E-04 | 1.8E-04 | 2.9E-06 | **6.0E-04** | Developmental | Developmental |
| Sediment | Sediment | BWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 4.0E-03 | NA | | **4.0E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 4.9E-03 | NA | | **4.9E-03** | Hematological | NA |
| | | | ARSENIC | 9.9E-06 | 4.6E-06 | | **1.5E-05** | 1.5E-01 | 7.2E-02 | | **2.3E-01** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | | **NA** | 3.6E-03 | 1.3E-03 | | **5.0E-03** | Renal | Renal |
| | | | CHROMIUM | 9.1E-06 | NA | | **9.1E-06** | 1.4E-02 | NA | | **1.4E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 1.5E-02 | NA | | **1.5E-02** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 1.2E-03 | NA | | **1.2E-03** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 6.9E-03 | NA | | **6.9E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 1.6E-02 | NA | | **1.6E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 1.2E-03 | NA | | **1.2E-03** | Nervous system | Nervous system |
| | | | VANADIUM | NA | NA | | **NA** | 3.0E-03 | NA | | **3.0E-03** | Systemic | Respiratory |
| | | | ZINC | NA | NA | | **NA** | 1.0E-03 | NA | | **1.0E-03** | Hematological | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 6.2E-09 | 8.1E-09 | | **1.4E-08** | 1.1E-03 | 1.4E-03 | | **2.5E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 1.6E-08 | 1.9E-08 | | **3.5E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 1.6E-07 | 1.9E-07 | | **3.5E-07** | 1.2E-03 | 1.5E-03 | | **2.7E-03** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 2.4E-08 | 2.8E-08 | | **5.2E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 2.3E-09 | 2.8E-09 | | **5.0E-09** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 3.3E-08 | 4.0E-08 | | **7.3E-08** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 8.7E-09 | 1.0E-08 | | **1.9E-08** | NA | NA | | **NA** | NA | NA |
| | | | NAPHTHALENE | NA | NA | | **NA** | 3.9E-05 | 4.7E-05 | | **8.5E-05** | Systemic | Respiratory |
| | | | **VOCs** | | | | | | | | | | |
| | | | TRICHLOROETHYLENE (TCE) | 1.7E-10 | NA | | **1.7E-10** | 3.6E-05 | NA | | **3.6E-05** | Developmental | Developmental |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Surface Water | Surface Water | BWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | | NA | | **NA** | | 1.6E-05 | | **1.6E-05** | Nervous system | Nervous system |
| | | | ANTIMONY | | NA | | **NA** | | 2.4E-04 | | **2.4E-04** | Hematological | NA |
| | | | ARSENIC | | 8.3E-08 | | **8.3E-08** | | 1.3E-03 | | **1.3E-03** | Skin | Respiratory |
| | | | CADMIUM | | NA | | **NA** | | 3.1E-04 | | **3.1E-04** | Renal | Renal |
| | | | CHROMIUM | | 4.8E-07 | | **4.8E-07** | | 7.5E-04 | | **7.5E-04** | None Observed | Respiratory |
| | | | COBALT | | NA | | **NA** | | 1.7E-05 | | **1.7E-05** | Endocrine | Endocrine |
| | | | CYANIDE | | NA | | **NA** | | 4.2E-05 | | **4.2E-05** | Reproductive | Endocrine |
| | | | IRON | | NA | | **NA** | | 1.2E-04 | | **1.2E-04** | Gastrointestinal | NA |
| | | | LEAD | | NA | | **NA** | | NA | | **NA** | NA | NA |
| | | | MANGANESE | | NA | | **NA** | | 9.2E-04 | | **9.2E-04** | Nervous system | Nervous system |
| | | | THALLIUM | | NA | | **NA** | | 1.6E-03 | | **1.6E-03** | Skin | NA |
| | | | VANADIUM | | NA | | **NA** | | 2.4E-04 | | **2.4E-04** | Systemic | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | | 6.0E-07 | | **6.0E-07** | | 4.7E-03 | | **4.7E-03** | Developmental | Developmental |
| **Exposure Point Total - BWL** | | | | 4.1E-05 | 8.3E-06 | 6.5E-08 | **5E-05** | 5.6E-01 | 1.2E-01 | 1.8E-03 | **7E-01** | | |
| | | | | | | | | **Total Organ HI (BWL)** | | | | | |
| | | | | | | | | Developmental | | | 8E-03 | | |
| | | | | | | | | Endocrine | | | 2E-02 | | |
| | | | | | | | | Gastrointestinal | | | 3E-02 | | |
| | | | | | | | | Hematological | | | 9E-03 | | |
| | | | | | | | | Immunological | | | 3E-03 | | |
| | | | | | | | | Nervous System | | | 1E-02 | | |
| | | | | | | | | None Observed | | | 3E-02 | | |
| | | | | | | | | Renal | | | 8E-03 | | |
| | | | | | | | | Reproductive | | | 8E-03 | | |
| | | | | | | | | Respiratory | | | 3E-04 | | |
| | | | | | | | | Skin | | | 6E-01 | | |
| | | | | | | | | Systemic | | | 6E-03 | | |
| Soil | Soil | HC | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | NA | **NA** | 8.5E-03 | NA | 7.8E-05 | **8.6E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | NA | **NA** | 1.2E-02 | NA | NA | **1.2E-02** | Hematological | NA |
| | | | ARSENIC | 5.9E-05 | 9.6E-06 | 1.3E-08 | **6.9E-05** | 9.2E-01 | 1.5E-01 | 1.4E-03 | **1.1E+00** | Skin | Respiratory |
| | | | BARIUM | NA | NA | NA | **NA** | 9.0E-03 | NA | 1.6E-04 | **9.2E-03** | Renal | Reproductive |
| | | | CADMIUM | NA | NA | 3.2E-11 | **3.2E-11** | 2.7E-03 | 3.5E-04 | 1.2E-05 | **3.1E-03** | Renal | Renal |
| | | | CHROMIUM | 1.3E-04 | NA | 9.8E-07 | **1.3E-04** | 2.0E-01 | NA | 2.7E-04 | **2.0E-01** | None Observed | Respiratory |
| | | | COBALT | NA | NA | 3.4E-10 | **3.4E-10** | 1.9E-02 | NA | 4.4E-05 | **2.0E-02** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | NA | **NA** | 3.3E-03 | NA | NA | **3.3E-03** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | NA | **NA** | 7.6E-02 | NA | 1.1E-01 | **1.9E-01** | Reproductive | Endocrine |
| | | | IRON | NA | NA | NA | **NA** | 3.7E-02 | NA | NA | **3.7E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | NA | **NA** | NA | NA | NA | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | NA | **NA** | 1.3E-02 | NA | 2.9E-04 | **1.3E-02** | Nervous system | Nervous system |
| | | | MERCURY | NA | NA | NA | **NA** | 2.4E-03 | NA | 1.1E-07 | **2.4E-03** | Immunological | Nervous system |
| | | | NICKEL | NA | NA | 2.2E-11 | **2.2E-11** | 6.3E-04 | NA | 6.4E-06 | **6.4E-04** | Systemic | Respiratory |
| | | | THALLIUM | NA | NA | NA | **NA** | 6.1E-02 | NA | NA | **6.1E-02** | Skin | NA |
| | | | VANADIUM | NA | NA | NA | **NA** | 5.7E-03 | NA | 1.3E-05 | **5.7E-03** | Systemic | Respiratory |
| | | | ZINC | NA | NA | NA | **NA** | 1.6E-03 | NA | NA | **1.6E-03** | Hematological | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 1.5E-08 | 6.6E-09 | 5.7E-10 | **2.2E-08** | 2.5E-03 | 1.2E-03 | NA | **3.7E-03** | Immunological | NA |
| | | | AROCLOR-1260 | 4.4E-08 | 2.0E-08 | 1.1E-09 | **6.5E-08** | 7.7E-03 | 3.5E-03 | NA | **1.1E-02** | Immunological | NA |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Soil | Soil | HC | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 6.3E-08 | 2.7E-08 | 1.0E-09 | **9.1E-08** | NA | NA | NA | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 7.0E-07 | 2.9E-07 | 1.9E-11 | **9.9E-07** | 5.4E-03 | 2.3E-03 | 3.7E-05 | **7.8E-03** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 8.0E-08 | 3.4E-08 | 2.2E-12 | **1.1E-07** | NA | NA | NA | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 7.3E-09 | 3.1E-09 | 2.0E-13 | **1.0E-08** | NA | NA | NA | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 1.2E-07 | 5.0E-08 | 3.2E-12 | **1.7E-07** | NA | NA | NA | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 3.1E-08 | 1.3E-08 | 8.4E-13 | **4.4E-08** | NA | NA | NA | **NA** | NA | NA |
| | | | NAPHTHALENE | NA | NA | 3.0E-09 | **3.0E-09** | 1.2E-05 | 5.2E-06 | 2.0E-04 | **2.2E-04** | Systemic | Respiratory |
| Sediment | Sediment | HC | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 2.3E-03 | NA | | **2.3E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 1.7E-03 | NA | | **1.7E-03** | Hematological | NA |
| | | | ARSENIC | 1.3E-05 | 6.3E-06 | | **2.0E-05** | 2.1E-01 | 9.7E-02 | | **3.1E-01** | Skin | Respiratory |
| | | | BARIUM | NA | NA | | **NA** | 1.4E-03 | NA | | **1.4E-03** | Renal | Reproductive |
| | | | CADMIUM | NA | NA | | **NA** | 1.2E-03 | 4.6E-04 | | **1.7E-03** | Renal | Renal |
| | | | CHROMIUM | 2.6E-05 | NA | | **2.6E-05** | 4.0E-02 | NA | | **4.0E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 4.5E-03 | NA | | **4.5E-03** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 1.2E-03 | NA | | **1.2E-03** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 2.2E-02 | NA | | **2.2E-02** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 6.7E-03 | NA | | **6.7E-03** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 9.2E-04 | NA | | **9.2E-04** | Nervous system | Nervous system |
| | | | NICKEL | NA | NA | | **NA** | 4.5E-04 | NA | | **4.5E-04** | Systemic | Respiratory |
| | | | THALLIUM | NA | NA | | **NA** | 4.5E-02 | NA | | **4.5E-02** | Skin | NA |
| | | | VANADIUM | NA | NA | | **NA** | 1.3E-03 | NA | | **1.3E-03** | Systemic | Respiratory |
| | | | ZINC | NA | NA | | **NA** | 4.4E-04 | NA | | **4.4E-04** | Hematological | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 1.0E-08 | 1.4E-08 | | **2.4E-08** | 1.8E-03 | 2.4E-03 | | **4.2E-03** | Immunological | NA |
| | | | AROCLOR-1260 | 4.5E-09 | 5.8E-09 | | **1.0E-08** | 7.9E-04 | 1.0E-03 | | **1.8E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 8.3E-09 | 1.0E-08 | | **1.8E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 8.1E-08 | 9.8E-08 | | **1.8E-07** | 6.3E-04 | 7.6E-04 | | **1.4E-03** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 1.1E-08 | 1.3E-08 | | **2.4E-08** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 2.2E-08 | 2.7E-08 | | **4.9E-08** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 4.5E-09 | 5.5E-09 | | **1.0E-08** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | HC | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | | NA | | **NA** | | 7.8E-05 | | **7.8E-05** | Nervous system | Nervous system |
| | | | ANTIMONY | | NA | | **NA** | | 7.0E-04 | | **7.0E-04** | Hematological | NA |
| | | | ARSENIC | | 2.9E-07 | | **2.9E-07** | | 4.5E-03 | | **4.5E-03** | Skin | Respiratory |
| | | | BARIUM | | NA | | **NA** | | 4.1E-04 | | **4.1E-04** | Renal | Reproductive |
| | | | CADMIUM | | NA | | **NA** | | 1.3E-03 | | **1.3E-03** | Renal | Renal |
| | | | CHROMIUM | | 1.3E-05 | | **1.3E-05** | | 2.0E-02 | | **2.0E-02** | None Observed | Respiratory |
| | | | COBALT | | NA | | **NA** | | 4.6E-05 | | **4.6E-05** | Endocrine | Endocrine |
| | | | COPPER | | NA | | **NA** | | 8.9E-06 | | **8.9E-06** | Gastrointestinal | NA |
| | | | CYANIDE | | NA | | **NA** | | 1.8E-04 | | **1.8E-04** | Reproductive | Endocrine |
| | | | IRON | | NA | | **NA** | | 2.5E-04 | | **2.5E-04** | Gastrointestinal | NA |
| | | | LEAD | | NA | | **NA** | | NA | | **NA** | NA | NA |
| | | | MANGANESE | | NA | | **NA** | | 2.1E-03 | | **2.1E-03** | Nervous system | Nervous system |
| | | | MERCURY | | NA | | **NA** | | 1.2E-04 | | **1.2E-04** | Immunological | Nervous system |
| | | | THALLIUM | | NA | | **NA** | | 6.8E-03 | | **6.8E-03** | Skin | NA |
| | | | VANADIUM | | NA | | **NA** | | 5.0E-04 | | **5.0E-04** | Systemic | Respiratory |
| | | | ZINC | | NA | | **NA** | | 1.2E-05 | | **1.2E-05** | Hematological | NA |
| **Exposure Point Total - HC** | | | | 2.3E-04 | 2.9E-05 | 1.0E-06 | **3E-04** | 1.7E+00 | 3.0E-01 | 1.1E-01 | **2E+00** | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| | | | | | | | | **Total Organ HI (HC)** | | | | | |
| | | | | | | | | Developmental | | | 9E-03 | | |
| | | | | | | | | Endocrine | | | 1E-01 | | |
| | | | | | | | | Gastrointestinal | | | 5E-02 | | |
| | | | | | | | | Hematological | | | 2E-02 | | |
| | | | | | | | | Immunological | | | 2E-02 | | |
| | | | | | | | | Nervous System | | | 3E-02 | | |
| | | | | | | | | None Observed | | | 3E-01 | | |
| | | | | | | | | Renal | | | 2E-02 | | |
| | | | | | | | | Reproductive | | | 1E-01 | | |
| | | | | | | | | Respiratory | | | 2E-03 | | |
| | | | | | | | | Skin | | | 1E+00 | | |
| | | | | | | | | Systemic | | | 9E-03 | | |
| Soil | Soil | KWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | NA | **NA** | 4.3E-03 | NA | 3.9E-05 | **4.3E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | NA | **NA** | 8.4E-03 | NA | NA | **8.4E-03** | Hematological | NA |
| | | | ARSENIC | 1.0E-06 | 1.6E-07 | 2.2E-10 | **1.2E-06** | 1.6E-02 | 2.5E-03 | 2.4E-05 | **1.8E-02** | Skin | Respiratory |
| | | | CHROMIUM | 3.7E-06 | NA | 2.8E-08 | **3.7E-06** | 5.7E-03 | NA | 7.8E-06 | **5.7E-03** | None Observed | Respiratory |
| | | | COBALT | NA | NA | 4.7E-11 | **4.7E-11** | 2.7E-03 | NA | 6.1E-06 | **2.7E-03** | Endocrine | Endocrine |
| | | | CYANIDE | NA | NA | NA | **NA** | 5.7E-04 | NA | 8.4E-04 | **1.4E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | NA | **NA** | 1.0E-02 | NA | NA | **1.0E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | NA | **NA** | NA | NA | NA | **NA** | NA | NA |
| | | | THALLIUM | NA | NA | NA | **NA** | 4.1E-02 | NA | NA | **4.1E-02** | Skin | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 5.0E-08 | 2.1E-08 | 1.4E-12 | **7.2E-08** | 3.9E-04 | 1.7E-04 | 2.7E-06 | **5.6E-04** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 1.0E-08 | 4.3E-09 | 2.8E-13 | **1.5E-08** | NA | NA | NA | **NA** | NA | NA |
| Sediment | Sediment | KWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 4.4E-03 | NA | | **4.4E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 1.4E-03 | NA | | **1.4E-03** | Hematological | NA |
| | | | ARSENIC | 3.1E-06 | 1.4E-06 | | **4.5E-06** | 4.8E-02 | 2.2E-02 | | **7.0E-02** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | | **NA** | 2.1E-03 | 7.8E-04 | | **2.9E-03** | Renal | Renal |
| | | | CHROMIUM | 1.0E-05 | NA | | **1.0E-05** | 1.6E-02 | NA | | **1.6E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 7.8E-03 | NA | | **7.8E-03** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 1.4E-03 | NA | | **1.4E-03** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 1.9E-03 | NA | | **1.9E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 1.0E-02 | NA | | **1.0E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 1.6E-03 | NA | | **1.6E-03** | Nervous system | Nervous system |
| | | | NICKEL | NA | NA | | **NA** | 5.0E-04 | NA | | **5.0E-04** | Systemic | Respiratory |
| | | | THALLIUM | NA | NA | | **NA** | 1.3E-02 | NA | | **1.3E-02** | Skin | NA |
| | | | VANADIUM | NA | NA | | **NA** | 1.4E-03 | NA | | **1.4E-03** | Systemic | Respiratory |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 1.3E-08 | 1.7E-08 | | **2.9E-08** | 2.2E-03 | 2.9E-03 | | **5.1E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 1.3E-08 | 1.6E-08 | | **2.9E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 1.2E-07 | 1.5E-07 | | **2.8E-07** | 9.7E-04 | 1.2E-03 | | **2.1E-03** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 1.6E-08 | 1.9E-08 | | **3.6E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 1.4E-09 | 1.7E-09 | | **3.1E-09** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 1.9E-08 | 2.3E-08 | | **4.2E-08** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 4.8E-09 | 5.8E-09 | | **1.1E-08** | NA | NA | | **NA** | NA | NA |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Surface Water | Surface Water | KWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | | NA | | **NA** | | 1.7E-05 | | **1.7E-05** | Nervous system | Nervous system |
| | | | ANTIMONY | | NA | | **NA** | | 7.8E-04 | | **7.8E-04** | Hematological | NA |
| | | | ARSENIC | | 4.5E-08 | | **4.5E-08** | | 7.0E-04 | | **7.0E-04** | Skin | Respiratory |
| | | | CHROMIUM | | 5.8E-07 | | **5.8E-07** | | 9.0E-04 | | **9.0E-04** | None Observed | Respiratory |
| | | | COBALT | | NA | | **NA** | | 2.7E-05 | | **2.7E-05** | Endocrine | Endocrine |
| | | | CYANIDE | | NA | | **NA** | | 3.8E-05 | | **3.8E-05** | Reproductive | Endocrine |
| | | | IRON | | NA | | **NA** | | 6.5E-05 | | **6.5E-05** | Gastrointestinal | NA |
| | | | LEAD | | NA | | **NA** | | NA | | **NA** | NA | NA |
| | | | MANGANESE | | NA | | **NA** | | 1.0E-03 | | **1.0E-03** | Nervous system | Nervous system |
| | | | THALLIUM | | NA | | **NA** | | 7.3E-03 | | **7.3E-03** | Skin | NA |
| **Exposure Point Total - KWL** | | | | 1.8E-05 | 2.5E-06 | 2.8E-08 | **2E-05** | 2.0E-01 | 4.1E-02 | 9.2E-04 | **2E-01** | | |
| | | | | | | | | **Total Organ HI (KWL)** | | | | | |
| | | | | | | | | Developmental | | | 3E-03 | | |
| | | | | | | | | Endocrine | | | 1E-02 | | |
| | | | | | | | | Gastrointestinal | | | 2E-02 | | |
| | | | | | | | | Hematological | | | 1E-02 | | |
| | | | | | | | | Immunological | | | 5E-03 | | |
| | | | | | | | | Nervous System | | | 1E-02 | | |
| | | | | | | | | None Observed | | | 2E-02 | | |
| | | | | | | | | Renal | | | 3E-03 | | |
| | | | | | | | | Reproductive | | | 2E-03 | | |
| | | | | | | | | Respiratory | | | 3E-05 | | |
| | | | | | | | | Skin | | | 1E-01 | | |
| | | | | | | | | Systemic | | | 2E-03 | | |

**Table 9.3**
**Chemical Cancer Risks and Non-cancer Hazards**
**Reasonable Maximum Exposure**
**Recreator - Child**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Sediment | Sediment | SL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 4.8E-03 | NA | | **4.8E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 9.1E-03 | NA | | **9.1E-03** | Hematological | NA |
| | | | ARSENIC | 1.2E-06 | 1.4E-07 | | **1.4E-06** | 3.2E-02 | 3.8E-03 | | **3.5E-02** | Skin | Respiratory |
| | | | CHROMIUM | 8.0E-06 | NA | | **8.0E-06** | 8.6E-03 | NA | | **8.6E-03** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 3.3E-02 | NA | | **3.3E-02** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 4.1E-03 | NA | | **4.1E-03** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 7.2E-03 | NA | | **7.2E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 1.8E-02 | NA | | **1.8E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 7.3E-03 | NA | | **7.3E-03** | Nervous system | Nervous system |
| | | | THALLIUM | NA | NA | | **NA** | 1.4E-01 | NA | | **1.4E-01** | Skin | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 1.8E-08 | 6.0E-09 | | **2.4E-08** | 5.2E-03 | 1.7E-03 | | **7.0E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 2.0E-06 | 5.4E-07 | | **2.5E-06** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 1.5E-05 | 4.0E-06 | | **1.9E-05** | 7.8E-02 | 2.4E-02 | | **1.0E-01** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 3.0E-06 | 8.1E-07 | | **3.8E-06** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 6.3E-08 | 1.7E-08 | | **8.0E-08** | NA | NA | | **NA** | NA | NA |
| | | | CHRYSENE | 3.0E-08 | 8.2E-09 | | **3.8E-08** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 1.5E-06 | 4.1E-07 | | **1.9E-06** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 4.1E-07 | 1.1E-07 | | **5.2E-07** | NA | NA | | **NA** | NA | NA |
| | | | **TICs** | | | | | | | | | | |
| | | | BENZO[J]FLUORANTHENE | 2.0E-06 | 6.1E-07 | | **2.6E-06** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | SL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | | 1.9E-08 | | **1.9E-08** | | 5.0E-04 | | **5.0E-04** | Skin | Respiratory |
| | | | CHROMIUM | | 5.4E-07 | | **5.4E-07** | | 6.5E-04 | | **6.5E-04** | None Observed | Respiratory |
| | | | COBALT | | NA | | **NA** | | 5.4E-05 | | **5.4E-05** | Endocrine | Endocrine |
| | | | CYANIDE | | NA | | **NA** | | 1.4E-04 | | **1.4E-04** | Reproductive | Endocrine |
| | | | IRON | | NA | | **NA** | | 3.1E-04 | | **3.1E-04** | Gastrointestinal | NA |
| | | | MANGANESE | | NA | | **NA** | | 1.9E-02 | | **1.9E-02** | Nervous system | Nervous system |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | | 1.5E-07 | | **1.5E-07** | | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | | 6.9E-06 | | **6.9E-06** | | 4.2E-02 | | **4.2E-02** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | | 2.7E-07 | | **2.7E-07** | | NA | | **NA** | NA | NA |
| | | | BIS(2-ETHYLHEXYL) PHTHALATE | | 4.2E-07 | | **4.2E-07** | | 1.7E-02 | | **1.7E-02** | Hepatic | NA |
| | | | DIBENZO(A,H)ANTHRACENE | | 2.2E-06 | | **2.2E-06** | | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | | 3.7E-07 | | **3.7E-07** | | NA | | **NA** | NA | NA |
| **Exposure Point Total - SL** | | | | 3.3E-05 | 1.8E-05 | 0.0E+00 | **5E-05** | 3.5E-01 | 1.1E-01 | 0.0E+00 | **5E-01** | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| | | | | | | | | **Total Organ HI (SL)** | | | | | |
| | | | | | | | | Developmental | | | 1E-01 | | |
| | | | | | | | | Endocrine | | | 3E-02 | | |
| | | | | | | | | Gastrointestinal | | | 2E-02 | | |
| | | | | | | | | Hematological | | | 9E-03 | | |
| | | | | | | | | Hepatic | | | 2E-02 | | |
| | | | | | | | | Immunological | | | 7E-03 | | |
| | | | | | | | | Nervous System | | | 3E-02 | | |
| | | | | | | | | None Observed | | | 9E-03 | | |
| | | | | | | | | Reproductive | | | 7E-03 | | |
| | | | | | | | | Skin | | | 2E-01 | | |
| Soil | Soil | BWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | NA | **NA** | 2.1E-02 | NA | 3.2E-05 | **2.1E-02** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | NA | **NA** | 1.9E-02 | NA | NA | **1.9E-02** | Hematological | NA |
| | | | ARSENIC | 4.9E-05 | 5.8E-06 | 1.8E-09 | **5.4E-05** | 1.3E+00 | 1.5E-01 | 3.2E-04 | **1.4E+00** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | 1.5E-11 | **1.5E-11** | 1.3E-02 | 1.2E-03 | 9.7E-06 | **1.4E-02** | Renal | Renal |
| | | | CHROMIUM | 6.9E-05 | NA | 6.6E-08 | **6.9E-05** | 7.4E-02 | NA | 1.7E-05 | **7.4E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | 3.6E-11 | **3.6E-11** | 2.0E-02 | NA | 7.7E-06 | **2.0E-02** | Endocrine | Endocrine |
| | | | CYANIDE | NA | NA | NA | **NA** | 5.5E-03 | NA | 1.4E-03 | **6.8E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | NA | **NA** | 4.9E-02 | NA | NA | **4.9E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | NA | **NA** | NA | NA | NA | **NA** | NA | NA |
| | | | THALLIUM | NA | NA | NA | **NA** | 4.7E-01 | NA | NA | **4.7E-01** | Skin | NA |
| | | | VANADIUM | NA | NA | NA | **NA** | 1.4E-02 | NA | 5.3E-06 | **1.4E-02** | Systemic | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 4.6E-07 | 1.3E-07 | 1.6E-12 | **5.9E-07** | 2.5E-03 | 7.6E-04 | 2.9E-06 | **3.2E-03** | Developmental | Developmental |
| Sediment | Sediment | BWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 2.4E-02 | NA | | **2.4E-02** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 2.9E-02 | NA | | **2.9E-02** | Hematological | NA |
| | | | ARSENIC | 3.5E-05 | 4.2E-06 | | **3.9E-05** | 9.1E-01 | 1.1E-01 | | **1.0E+00** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | | **NA** | 2.1E-02 | 2.0E-03 | | **2.3E-02** | Renal | Renal |
| | | | CHROMIUM | 7.8E-05 | NA | | **7.8E-05** | 8.3E-02 | NA | | **8.3E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 9.0E-02 | NA | | **9.0E-02** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 7.1E-03 | NA | | **7.1E-03** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 4.1E-02 | NA | | **4.1E-02** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 9.7E-02 | NA | | **9.7E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 7.3E-03 | NA | | **7.3E-03** | Nervous system | Nervous system |
| | | | VANADIUM | NA | NA | | **NA** | 1.8E-02 | NA | | **1.8E-02** | Systemic | Respiratory |
| | | | ZINC | NA | NA | | **NA** | 6.0E-03 | NA | | **6.0E-03** | Hematological | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 2.2E-08 | 7.3E-09 | | **2.9E-08** | 6.4E-03 | 2.1E-03 | | **8.6E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 1.4E-07 | 3.7E-08 | | **1.7E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 1.4E-06 | 3.8E-07 | | **1.8E-06** | 7.3E-03 | 2.3E-03 | | **9.6E-03** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 2.0E-07 | 5.6E-08 | | **2.6E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 2.0E-08 | 5.4E-09 | | **2.5E-08** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 2.9E-07 | 7.8E-08 | | **3.6E-07** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 7.5E-08 | 2.0E-08 | | **9.5E-08** | NA | NA | | **NA** | NA | NA |
| | | | NAPHTHALENE | NA | NA | | **NA** | 2.3E-04 | 7.1E-05 | | **3.0E-04** | Systemic | Respiratory |
| | | | **VOCs** | | | | | | | | | | |
| | | | TRICHLOROETHYLENE (TCE) | 9.6E-10 | NA | | **9.6E-10** | 2.1E-04 | NA | | **2.1E-04** | Developmental | Developmental |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Surface Water | Surface Water | BWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | | NA | | **NA** | | 2.5E-05 | | **2.5E-05** | Nervous system | Nervous system |
| | | | ANTIMONY | | NA | | **NA** | | 3.7E-04 | | **3.7E-04** | Hematological | NA |
| | | | ARSENIC | | 7.5E-08 | | **7.5E-08** | | 1.9E-03 | | **1.9E-03** | Skin | Respiratory |
| | | | CADMIUM | | NA | | **NA** | | 4.7E-04 | | **4.7E-04** | Renal | Renal |
| | | | CHROMIUM | | 9.5E-07 | | **9.5E-07** | | 1.1E-03 | | **1.1E-03** | None Observed | Respiratory |
| | | | COBALT | | NA | | **NA** | | 2.6E-05 | | **2.6E-05** | Endocrine | Endocrine |
| | | | CYANIDE | | NA | | **NA** | | 6.4E-05 | | **6.4E-05** | Reproductive | Endocrine |
| | | | IRON | | NA | | **NA** | | 1.8E-04 | | **1.8E-04** | Gastrointestinal | NA |
| | | | LEAD | | NA | | **NA** | | NA | | **NA** | NA | NA |
| | | | MANGANESE | | NA | | **NA** | | 1.4E-03 | | **1.4E-03** | Nervous system | Nervous system |
| | | | THALLIUM | | NA | | **NA** | | 2.4E-03 | | **2.4E-03** | Skin | NA |
| | | | VANADIUM | | NA | | **NA** | | 3.6E-04 | | **3.6E-04** | Systemic | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | | 1.2E-06 | | **1.2E-06** | | 7.1E-03 | | **7.1E-03** | Developmental | Developmental |
| **Exposure Point Total - BWL** | | | | 2.3E-04 | 1.3E-05 | 6.7E-08 | **2E-04** | 3.3E+00 | 2.8E-01 | 1.8E-03 | **4E+00** | | |
| | | | | | | | | **Total Organ HI (BWL)** | | | | | |
| | | | | | | | | Developmental | | | 2E-02 | | |
| | | | | | | | | Endocrine | | | 1E-01 | | |
| | | | | | | | | Gastrointestinal | | | 2E-01 | | |
| | | | | | | | | Hematological | | | 6E-02 | | |
| | | | | | | | | Immunological | | | 9E-03 | | |
| | | | | | | | | Nervous System | | | 5E-02 | | |
| | | | | | | | | None Observed | | | 2E-01 | | |
| | | | | | | | | Renal | | | 4E-02 | | |
| | | | | | | | | Reproductive | | | 5E-02 | | |
| | | | | | | | | Respiratory | | | 3E-04 | | |
| | | | | | | | | Skin | | | 3E+00 | | |
| | | | | | | | | Systemic | | | 3E-02 | | |
| Soil | Soil | HC | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | NA | **NA** | 5.0E-02 | NA | 7.8E-05 | **5.0E-02** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | NA | **NA** | 7.3E-02 | NA | NA | **7.3E-02** | Hematological | NA |
| | | | ARSENIC | 2.1E-04 | 2.5E-05 | 7.8E-09 | **2.3E-04** | 5.4E+00 | 6.5E-01 | 1.4E-03 | **6.1E+00** | Skin | Respiratory |
| | | | BARIUM | NA | NA | NA | **NA** | 5.3E-02 | NA | 1.6E-04 | **5.3E-02** | Renal | Reproductive |
| | | | CADMIUM | NA | NA | 1.9E-11 | **1.9E-11** | 1.6E-02 | 1.5E-03 | 1.2E-05 | **1.7E-02** | Renal | Renal |
| | | | CHROMIUM | 1.1E-03 | NA | 1.0E-06 | **1.1E-03** | 1.2E+00 | NA | 2.7E-04 | **1.2E+00** | None Observed | Respiratory |
| | | | COBALT | NA | NA | 2.1E-10 | **2.1E-10** | 1.2E-01 | NA | 4.4E-05 | **1.2E-01** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | NA | **NA** | 2.0E-02 | NA | NA | **2.0E-02** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | NA | **NA** | 4.5E-01 | NA | 1.1E-01 | **5.6E-01** | Reproductive | Endocrine |
| | | | IRON | NA | NA | NA | **NA** | 2.2E-01 | NA | NA | **2.2E-01** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | NA | **NA** | NA | NA | NA | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | NA | **NA** | 7.7E-02 | NA | 2.9E-04 | **7.8E-02** | Nervous system | Nervous system |
| | | | MERCURY | NA | NA | NA | **NA** | 1.4E-02 | NA | 1.1E-07 | **1.4E-02** | Immunological | Nervous system |
| | | | NICKEL | NA | NA | 1.3E-11 | **1.3E-11** | 3.7E-03 | NA | 6.4E-06 | **3.8E-03** | Systemic | Respiratory |
| | | | THALLIUM | NA | NA | NA | **NA** | 3.6E-01 | NA | NA | **3.6E-01** | Skin | NA |
| | | | VANADIUM | NA | NA | NA | **NA** | 3.3E-02 | NA | 1.3E-05 | **3.3E-02** | Systemic | Respiratory |
| | | | ZINC | NA | NA | NA | **NA** | 9.7E-03 | NA | NA | **9.7E-03** | Hematological | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 5.2E-08 | 1.7E-08 | 3.4E-10 | **6.9E-08** | 1.5E-02 | 5.0E-03 | NA | **2.0E-02** | Immunological | NA |
| | | | AROCLOR-1260 | 1.5E-07 | 5.1E-08 | 6.6E-10 | **2.1E-07** | 4.5E-02 | 1.5E-02 | NA | **6.0E-02** | Immunological | NA |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Soil | Soil | HC | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 5.5E-07 | 1.5E-07 | 1.1E-09 | **7.0E-07** | NA | NA | NA | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 6.0E-06 | 1.6E-06 | 2.0E-11 | **7.6E-06** | 3.2E-02 | 9.9E-03 | 3.7E-05 | **4.2E-02** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 6.9E-07 | 1.9E-07 | 2.3E-12 | **8.8E-07** | NA | NA | NA | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 6.3E-08 | 1.7E-08 | 2.1E-13 | **8.1E-08** | NA | NA | NA | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 1.0E-06 | 2.8E-07 | 3.4E-12 | **1.3E-06** | NA | NA | NA | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 2.6E-07 | 7.2E-08 | 9.0E-13 | **3.4E-07** | NA | NA | NA | **NA** | NA | NA |
| | | | NAPHTHALENE | NA | NA | 1.8E-09 | **1.8E-09** | 7.3E-05 | 2.2E-05 | 2.0E-04 | **3.0E-04** | Systemic | Respiratory |
| Sediment | Sediment | HC | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 1.3E-02 | NA | | **1.3E-02** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 9.9E-03 | NA | | **9.9E-03** | Hematological | NA |
| | | | ARSENIC | 4.8E-05 | 5.7E-06 | | **5.3E-05** | 1.2E+00 | 1.5E-01 | | **1.4E+00** | Skin | Respiratory |
| | | | BARIUM | NA | NA | | **NA** | 8.1E-03 | NA | | **8.1E-03** | Renal | Reproductive |
| | | | CADMIUM | NA | NA | | **NA** | 7.3E-03 | 6.9E-04 | | **8.0E-03** | Renal | Renal |
| | | | CHROMIUM | 2.2E-04 | NA | | **2.2E-04** | 2.4E-01 | NA | | **2.4E-01** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 2.7E-02 | NA | | **2.7E-02** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 6.8E-03 | NA | | **6.8E-03** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 1.3E-01 | NA | | **1.3E-01** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 3.9E-02 | NA | | **3.9E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 5.5E-03 | NA | | **5.5E-03** | Nervous system | Nervous system |
| | | | NICKEL | NA | NA | | **NA** | 2.7E-03 | NA | | **2.7E-03** | Systemic | Respiratory |
| | | | THALLIUM | NA | NA | | **NA** | 2.6E-01 | NA | | **2.6E-01** | Skin | NA |
| | | | VANADIUM | NA | NA | | **NA** | 7.8E-03 | NA | | **7.8E-03** | Systemic | Respiratory |
| | | | ZINC | NA | NA | | **NA** | 2.6E-03 | NA | | **2.6E-03** | Hematological | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 3.7E-08 | 1.2E-08 | | **5.0E-08** | 1.1E-02 | 3.6E-03 | | **1.4E-02** | Immunological | NA |
| | | | AROCLOR-1260 | 1.6E-08 | 5.3E-09 | | **2.1E-08** | 4.6E-03 | 1.5E-03 | | **6.2E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 7.1E-08 | 2.0E-08 | | **9.1E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 7.0E-07 | 1.9E-07 | | **8.9E-07** | 3.7E-03 | 1.2E-03 | | **4.9E-03** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 9.5E-08 | 2.6E-08 | | **1.2E-07** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 1.9E-07 | 5.2E-08 | | **2.4E-07** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 3.9E-08 | 1.1E-08 | | **5.0E-08** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | HC | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | | NA | | **NA** | | 1.2E-04 | | **1.2E-04** | Nervous system | Nervous system |
| | | | ANTIMONY | | NA | | **NA** | | 1.1E-03 | | **1.1E-03** | Hematological | NA |
| | | | ARSENIC | | 2.6E-07 | | **2.6E-07** | | 6.9E-03 | | **6.9E-03** | Skin | Respiratory |
| | | | BARIUM | | NA | | **NA** | | 6.2E-04 | | **6.2E-04** | Renal | Reproductive |
| | | | CADMIUM | | NA | | **NA** | | 1.9E-03 | | **1.9E-03** | Renal | Renal |
| | | | CHROMIUM | | 2.5E-05 | | **2.5E-05** | | 3.0E-02 | | **3.0E-02** | None Observed | Respiratory |
| | | | COBALT | | NA | | **NA** | | 6.9E-05 | | **6.9E-05** | Endocrine | Endocrine |
| | | | COPPER | | NA | | **NA** | | 1.3E-05 | | **1.3E-05** | Gastrointestinal | NA |
| | | | CYANIDE | | NA | | **NA** | | 2.7E-04 | | **2.7E-04** | Reproductive | Endocrine |
| | | | IRON | | NA | | **NA** | | 3.7E-04 | | **3.7E-04** | Gastrointestinal | NA |
| | | | LEAD | | NA | | **NA** | | NA | | **NA** | NA | NA |
| | | | MANGANESE | | NA | | **NA** | | 3.2E-03 | | **3.2E-03** | Nervous system | Nervous system |
| | | | MERCURY | | NA | | **NA** | | 1.8E-04 | | **1.8E-04** | Immunological | Nervous system |
| | | | THALLIUM | | NA | | **NA** | | 1.0E-02 | | **1.0E-02** | Skin | NA |
| | | | VANADIUM | | NA | | **NA** | | 7.5E-04 | | **7.5E-04** | Systemic | Respiratory |
| | | | ZINC | | NA | | **NA** | | 1.8E-05 | | **1.8E-05** | Hematological | NA |
| **Exposure Point Total - HC** | | | | 1.6E-03 | 5.8E-05 | 1.1E-06 | **2E-03** | 1.0E+01 | 8.9E-01 | 1.1E-01 | **1E+01** | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| | | | | | | | | **Total Organ HI (HC)** | | | | | |
| | | | | | | | | Developmental | | | 5E-02 | | |
| | | | | | | | | Endocrine | | | 3E-01 | | |
| | | | | | | | | Gastrointestinal | | | 3E-01 | | |
| | | | | | | | | Hematological | | | 1E-01 | | |
| | | | | | | | | Immunological | | | 1E-01 | | |
| | | | | | | | | Nervous System | | | 2E-01 | | |
| | | | | | | | | None Observed | | | 1E+00 | | |
| | | | | | | | | Renal | | | 9E-02 | | |
| | | | | | | | | Reproductive | | | 6E-01 | | |
| | | | | | | | | Respiratory | | | 2E-03 | | |
| | | | | | | | | Skin | | | 8E+00 | | |
| | | | | | | | | Systemic | | | 5E-02 | | |
| Soil | Soil | KWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | NA | **NA** | 2.5E-02 | NA | 3.9E-05 | **2.5E-02** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | NA | **NA** | 5.0E-02 | NA | NA | **5.0E-02** | Hematological | NA |
| | | | ARSENIC | 3.6E-06 | 4.2E-07 | 1.3E-10 | **4.0E-06** | 9.2E-02 | 1.1E-02 | 2.4E-05 | **1.0E-01** | Skin | Respiratory |
| | | | CHROMIUM | 3.2E-05 | NA | 3.0E-08 | **3.2E-05** | 3.4E-02 | NA | 7.8E-06 | **3.4E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | 2.8E-11 | **2.8E-11** | 1.6E-02 | NA | 6.1E-06 | **1.6E-02** | Endocrine | Endocrine |
| | | | CYANIDE | NA | NA | NA | **NA** | 3.4E-03 | NA | 8.4E-04 | **4.2E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | NA | **NA** | 6.1E-02 | NA | NA | **6.1E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | NA | **NA** | NA | NA | NA | **NA** | NA | NA |
| | | | THALLIUM | NA | NA | NA | **NA** | 2.4E-01 | NA | NA | **2.4E-01** | Skin | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 4.3E-07 | 1.2E-07 | 1.5E-12 | **5.5E-07** | 2.3E-03 | 7.2E-04 | 2.7E-06 | **3.0E-03** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 8.8E-08 | 2.4E-08 | 3.0E-13 | **1.1E-07** | NA | NA | NA | **NA** | NA | NA |
| Sediment | Sediment | KWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 2.6E-02 | NA | | **2.6E-02** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 8.2E-03 | NA | | **8.2E-03** | Hematological | NA |
| | | | ARSENIC | 1.1E-05 | 1.3E-06 | | **1.2E-05** | 2.8E-01 | 3.4E-02 | | **3.2E-01** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | | **NA** | 1.2E-02 | 1.2E-03 | | **1.4E-02** | Renal | Renal |
| | | | CHROMIUM | 8.7E-05 | NA | | **8.7E-05** | 9.2E-02 | NA | | **9.2E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 4.6E-02 | NA | | **4.6E-02** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 8.4E-03 | NA | | **8.4E-03** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 1.1E-02 | NA | | **1.1E-02** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 6.1E-02 | NA | | **6.1E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 9.5E-03 | NA | | **9.5E-03** | Nervous system | Nervous system |
| | | | NICKEL | NA | NA | | **NA** | 2.9E-03 | NA | | **2.9E-03** | Systemic | Respiratory |
| | | | THALLIUM | NA | NA | | **NA** | 7.5E-02 | NA | | **7.5E-02** | Skin | NA |
| | | | VANADIUM | NA | NA | | **NA** | 8.4E-03 | NA | | **8.4E-03** | Systemic | Respiratory |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 4.5E-08 | 1.5E-08 | | **6.0E-08** | 1.3E-02 | 4.4E-03 | | **1.8E-02** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 1.1E-07 | 3.1E-08 | | **1.5E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 1.1E-06 | 2.9E-07 | | **1.4E-06** | 5.7E-03 | 1.8E-03 | | **7.5E-03** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 1.4E-07 | 3.8E-08 | | **1.8E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 1.2E-08 | 3.3E-09 | | **1.5E-08** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 1.6E-07 | 4.5E-08 | | **2.1E-07** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 4.2E-08 | 1.1E-08 | | **5.3E-08** | NA | NA | | **NA** | NA | NA |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Surface Water | Surface Water | KWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | | NA | | **NA** | | 2.6E-05 | | **2.6E-05** | Nervous system | Nervous system |
| | | | ANTIMONY | | NA | | **NA** | | 1.2E-03 | | **1.2E-03** | Hematological | NA |
| | | | ARSENIC | | 4.1E-08 | | **4.1E-08** | | 1.1E-03 | | **1.1E-03** | Skin | Respiratory |
| | | | CHROMIUM | | 1.1E-06 | | **1.1E-06** | | 1.4E-03 | | **1.4E-03** | None Observed | Respiratory |
| | | | COBALT | | NA | | **NA** | | 4.1E-05 | | **4.1E-05** | Endocrine | Endocrine |
| | | | CYANIDE | | NA | | **NA** | | 5.7E-05 | | **5.7E-05** | Reproductive | Endocrine |
| | | | IRON | | NA | | **NA** | | 9.8E-05 | | **9.8E-05** | Gastrointestinal | NA |
| | | | LEAD | | NA | | **NA** | | NA | | **NA** | NA | NA |
| | | | MANGANESE | | NA | | **NA** | | 1.6E-03 | | **1.6E-03** | Nervous system | Nervous system |
| | | | THALLIUM | | NA | | **NA** | | 1.1E-02 | | **1.1E-02** | Skin | NA |
| **Exposure Point Total - KWL** | | | | 1.3E-04 | 3.5E-06 | 3.0E-08 | **1E-04** | 1.2E+00 | 6.9E-02 | 9.2E-04 | **1E+00** | | |
| | | | | | | | | **Total Organ HI (KWL)** | | | | | |
| | | | | | | | | Developmental | | | 1E-02 | | |
| | | | | | | | | Endocrine | | | 6E-02 | | |
| | | | | | | | | Gastrointestinal | | | 1E-01 | | |
| | | | | | | | | Hematological | | | 6E-02 | | |
| | | | | | | | | Immunological | | | 2E-02 | | |
| | | | | | | | | Nervous System | | | 6E-02 | | |
| | | | | | | | | None Observed | | | 1E-01 | | |
| | | | | | | | | Renal | | | 1E-02 | | |
| | | | | | | | | Reproductive | | | 1E-02 | | |
| | | | | | | | | Respiratory | | | 3E-05 | | |
| | | | | | | | | Skin | | | 7E-01 | | |
| | | | | | | | | Systemic | | | 1E-02 | | |

**Table 9.4**
**Chemical Cancer Risks and Non-cancer Hazards**
**Reasonable Maximum Exposure**
**Swimmer - Adult**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Sediment | Sediment | SL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 1.1E-03 | NA | | **1.1E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 2.0E-03 | NA | | **2.0E-03** | Hematological | NA |
| | | | ARSENIC | 1.2E-06 | 7.1E-07 | | **1.9E-06** | 7.1E-03 | 4.3E-03 | | **1.1E-02** | Skin | Respiratory |
| | | | CHROMIUM | 1.1E-06 | NA | | **1.1E-06** | 1.9E-03 | NA | | **1.9E-03** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 7.4E-03 | NA | | **7.4E-03** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 9.1E-04 | NA | | **9.1E-04** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 1.6E-03 | NA | | **1.6E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 4.1E-03 | NA | | **4.1E-03** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 1.6E-03 | NA | | **1.6E-03** | Nervous system | Nervous system |
| | | | THALLIUM | NA | NA | | **NA** | 3.1E-02 | NA | | **3.1E-02** | Skin | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 1.7E-08 | 2.9E-08 | | **4.7E-08** | 1.2E-03 | 2.0E-03 | | **3.1E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 2.6E-07 | 4.1E-07 | | **6.8E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 2.0E-06 | 3.1E-06 | | **5.0E-06** | 1.8E-02 | 2.8E-02 | | **4.5E-02** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 3.9E-07 | 6.2E-07 | | **1.0E-06** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 8.4E-09 | 1.3E-08 | | **2.1E-08** | NA | NA | | **NA** | NA | NA |
| | | | CHRYSENE | 4.0E-09 | 6.2E-09 | | **1.0E-08** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 2.0E-07 | 3.1E-07 | | **5.1E-07** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 5.4E-08 | 8.5E-08 | | **1.4E-07** | NA | NA | | **NA** | NA | NA |
| | | | **TICs** | | | | | | | | | | |
| | | | BENZO[J]FLUORANTHENE | 1.9E-06 | 3.0E-06 | | **4.9E-06** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | SL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 2.8E-06 | 7.0E-07 | | **3.5E-06** | 1.7E-02 | 4.2E-03 | | **2.1E-02** | Skin | Respiratory |
| | | | CHROMIUM | 3.0E-07 | 3.1E-06 | | **3.4E-06** | 5.4E-04 | 5.5E-03 | | **6.0E-03** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 4.5E-03 | 4.6E-04 | | **5.0E-03** | Endocrine | Endocrine |
| | | | CYANIDE | NA | NA | | **NA** | 4.7E-03 | 1.2E-03 | | **5.9E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 1.0E-02 | 2.6E-03 | | **1.3E-02** | Gastrointestinal | NA |
| | | | MANGANESE | NA | NA | | **NA** | 2.5E-02 | 1.6E-01 | | **1.8E-01** | Nervous system | Nervous system |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 1.6E-09 | 5.8E-07 | | **5.8E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 4.7E-08 | 2.6E-05 | | **2.6E-05** | 4.3E-04 | 2.3E-01 | | **2.3E-01** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 3.2E-09 | 1.0E-06 | | **1.0E-06** | NA | NA | | **NA** | NA | NA |
| | | | BIS(2-ETHYLHEXYL) PHTHALATE | 5.9E-09 | 1.0E-05 | | **1.0E-05** | 5.7E-05 | 9.7E-02 | | **9.7E-02** | Hepatic | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 1.6E-08 | 8.4E-06 | | **8.5E-06** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 2.1E-09 | 1.4E-06 | | **1.4E-06** | NA | NA | | **NA** | NA | NA |
| **Exposure Point Total - SL** | | | | 1.0E-05 | 6.0E-05 | 0.0E+00 | **7E-05** | 1.4E-01 | 5.4E-01 | 0.0E+00 | **7E-01** | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| | | | | | | | | **Total Organ HI (SL)** | | | | | |
| | | | | | | | | Developmental | | | 3E-01 | | |
| | | | | | | | | Endocrine | | | 1E-02 | | |
| | | | | | | | | Gastrointestinal | | | 2E-02 | | |
| | | | | | | | | Hematological | | | 2E-03 | | |
| | | | | | | | | Hepatic | | | 1E-01 | | |
| | | | | | | | | Immunological | | | 3E-03 | | |
| | | | | | | | | Nervous System | | | 2E-01 | | |
| | | | | | | | | None Observed | | | 8E-03 | | |
| | | | | | | | | Reproductive | | | 8E-03 | | |
| | | | | | | | | Skin | | | 6E-02 | | |
| Sediment | Sediment | BWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 5.3E-03 | NA | | **5.3E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 6.5E-03 | NA | | **6.5E-03** | Hematological | NA |
| | | | ARSENIC | 3.4E-05 | 2.1E-05 | | **5.5E-05** | 2.0E-01 | 1.2E-01 | | **3.3E-01** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | | **NA** | 4.8E-03 | 2.3E-03 | | **7.1E-03** | Renal | Renal |
| | | | CHROMIUM | 1.0E-05 | NA | | **1.0E-05** | 1.9E-02 | NA | | **1.9E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 2.0E-02 | NA | | **2.0E-02** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 1.6E-03 | NA | | **1.6E-03** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 9.1E-03 | NA | | **9.1E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 2.2E-02 | NA | | **2.2E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 1.6E-03 | NA | | **1.6E-03** | Nervous system | Nervous system |
| | | | VANADIUM | NA | NA | | **NA** | 4.0E-03 | NA | | **4.0E-03** | Systemic | Respiratory |
| | | | ZINC | NA | NA | | **NA** | 1.3E-03 | NA | | **1.3E-03** | Hematological | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 2.1E-08 | 3.6E-08 | | **5.8E-08** | 1.4E-03 | 2.4E-03 | | **3.9E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 1.8E-08 | 2.8E-08 | | **4.6E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 1.8E-07 | 2.9E-07 | | **4.7E-07** | 1.6E-03 | 2.6E-03 | | **4.2E-03** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 2.7E-08 | 4.2E-08 | | **6.9E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 2.6E-09 | 4.1E-09 | | **6.7E-09** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 3.8E-08 | 6.0E-08 | | **9.8E-08** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 1.0E-08 | 1.6E-08 | | **2.6E-08** | NA | NA | | **NA** | NA | NA |
| | | | NAPHTHALENE | NA | NA | | **NA** | 5.1E-05 | 8.0E-05 | | **1.3E-04** | Systemic | Respiratory |
| | | | **VOCs** | | | | | | | | | | |
| | | | TRICHLOROETHYLENE (TCE) | 4.1E-10 | NA | | **4.1E-10** | 4.8E-05 | NA | | **4.8E-05** | Developmental | Developmental |
| Surface Water | Surface Water | BWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 8.2E-04 | 2.1E-04 | | **1.0E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 1.8E-03 | 3.1E-03 | | **4.9E-03** | Hematological | NA |
| | | | ARSENIC | 1.1E-05 | 2.7E-06 | | **1.4E-05** | 6.5E-02 | 1.6E-02 | | **8.2E-02** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | | **NA** | 7.9E-04 | 4.0E-03 | | **4.8E-03** | Renal | Renal |
| | | | CHROMIUM | 5.3E-07 | 5.4E-06 | | **5.9E-06** | 9.5E-04 | 9.6E-03 | | **1.1E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 2.1E-03 | 2.2E-04 | | **2.4E-03** | Endocrine | Endocrine |
| | | | CYANIDE | NA | NA | | **NA** | 2.1E-03 | 5.4E-04 | | **2.7E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 5.9E-03 | 1.5E-03 | | **7.4E-03** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 1.9E-03 | 1.2E-02 | | **1.4E-02** | Nervous system | Nervous system |
| | | | THALLIUM | NA | NA | | **NA** | 7.9E-02 | 2.0E-02 | | **9.9E-02** | Skin | NA |
| | | | VANADIUM | NA | NA | | **NA** | 3.1E-04 | 3.0E-03 | | **3.4E-03** | Systemic | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 8.1E-09 | 4.4E-06 | | **4.4E-06** | 7.2E-05 | 4.0E-02 | | **4.0E-02** | Developmental | Developmental |
| **Exposure Point Total - BWL** | | | | 5.6E-05 | 3.4E-05 | 0.0E+00 | **9E-05** | 4.6E-01 | 2.4E-01 | 0.0E+00 | **7E-01** | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| | | | | | | | | **Total Organ HI (BWL)** | | | | | |
| | | | | | | | | Developmental | | | 4E-02 | | |
| | | | | | | | | Endocrine | | | 2E-02 | | |
| | | | | | | | | Gastrointestinal | | | 3E-02 | | |
| | | | | | | | | Hematological | | | 1E-02 | | |
| | | | | | | | | Immunological | | | 4E-03 | | |
| | | | | | | | | Nervous System | | | 2E-02 | | |
| | | | | | | | | None Observed | | | 3E-02 | | |
| | | | | | | | | Renal | | | 1E-02 | | |
| | | | | | | | | Reproductive | | | 1E-02 | | |
| | | | | | | | | Skin | | | 5E-01 | | |
| | | | | | | | | Systemic | | | 8E-03 | | |
| Sediment | Sediment | KWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 5.8E-03 | NA | | **5.8E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 1.8E-03 | NA | | **1.8E-03** | Hematological | NA |
| | | | ARSENIC | 1.1E-05 | 6.4E-06 | | **1.7E-05** | 6.3E-02 | 3.8E-02 | | **1.0E-01** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | | **NA** | 2.8E-03 | 1.3E-03 | | **4.1E-03** | Renal | Renal |
| | | | CHROMIUM | 1.2E-05 | NA | | **1.2E-05** | 2.1E-02 | NA | | **2.1E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 1.0E-02 | NA | | **1.0E-02** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 1.9E-03 | NA | | **1.9E-03** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 2.4E-03 | NA | | **2.4E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 1.4E-02 | NA | | **1.4E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 2.1E-03 | NA | | **2.1E-03** | Nervous system | Nervous system |
| | | | NICKEL | NA | NA | | **NA** | 6.6E-04 | NA | | **6.6E-04** | Systemic | Respiratory |
| | | | THALLIUM | NA | NA | | **NA** | 1.7E-02 | NA | | **1.7E-02** | Skin | NA |
| | | | VANADIUM | NA | NA | | **NA** | 1.9E-03 | NA | | **1.9E-03** | Systemic | Respiratory |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 4.4E-08 | 7.4E-08 | | **1.2E-07** | 2.9E-03 | 5.0E-03 | | **7.9E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 1.5E-08 | 2.4E-08 | | **3.9E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 1.4E-07 | 2.2E-07 | | **3.7E-07** | 1.3E-03 | 2.0E-03 | | **3.3E-03** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 1.8E-08 | 2.9E-08 | | **4.8E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 1.6E-09 | 2.5E-09 | | **4.2E-09** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 2.2E-08 | 3.4E-08 | | **5.6E-08** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 5.5E-09 | 8.7E-09 | | **1.4E-08** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | KWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 8.8E-04 | 2.2E-04 | | **1.1E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 5.9E-03 | 9.9E-03 | | **1.6E-02** | Hematological | NA |
| | | | ARSENIC | 5.9E-06 | 1.5E-06 | | **7.4E-06** | 3.6E-02 | 9.0E-03 | | **4.4E-02** | Skin | Respiratory |
| | | | CHROMIUM | 6.3E-07 | 6.4E-06 | | **7.0E-06** | 1.1E-03 | 1.1E-02 | | **1.3E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 3.4E-03 | 3.4E-04 | | **3.7E-03** | Endocrine | Endocrine |
| | | | CYANIDE | NA | NA | | **NA** | 1.9E-03 | 4.8E-04 | | **2.4E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 3.3E-03 | 8.3E-04 | | **4.1E-03** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 2.1E-03 | 1.3E-02 | | **1.5E-02** | Nervous system | Nervous system |
| | | | THALLIUM | NA | NA | | **NA** | 3.7E-01 | 9.3E-02 | | **4.6E-01** | Skin | NA |
| **Exposure Point Total - KWL** | | | | 2.9E-05 | 1.5E-05 | 0.0E+00 | **4E-05** | 5.7E-01 | 1.9E-01 | 0.0E+00 | **8E-01** | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| | | | | | | | | **Total Organ HI (KWL)** | | | | | |
| | | | | | | | | Developmental | | | 3E-03 | | |
| | | | | | | | | Endocrine | | | 1E-02 | | |
| | | | | | | | | Gastrointestinal | | | 2E-02 | | |
| | | | | | | | | Hematological | | | 2E-02 | | |
| | | | | | | | | Immunological | | | 8E-03 | | |
| | | | | | | | | Nervous System | | | 2E-02 | | |
| | | | | | | | | None Observed | | | 3E-02 | | |
| | | | | | | | | Renal | | | 4E-03 | | |
| | | | | | | | | Reproductive | | | 5E-03 | | |
| | | | | | | | | Skin | | | 6E-01 | | |
| | | | | | | | | Systemic | | | 3E-03 | | |

**Table 9.5**
**Chemical Cancer Risks and Non-cancer Hazards**
**Reasonable Maximum Exposure**
**Swimmer - Adolescent**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Sediment | Sediment | SL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 1.9E-03 | NA | | **1.9E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 3.7E-03 | NA | | **3.7E-03** | Hematological | NA |
| | | | ARSENIC | 8.2E-07 | 3.8E-07 | | **1.2E-06** | 1.3E-02 | 5.9E-03 | | **1.9E-02** | Skin | Respiratory |
| | | | CHROMIUM | 2.2E-06 | NA | | **2.2E-06** | 3.5E-03 | NA | | **3.5E-03** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 1.3E-02 | NA | | **1.3E-02** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 1.6E-03 | NA | | **1.6E-03** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 2.9E-03 | NA | | **2.9E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 7.4E-03 | NA | | **7.4E-03** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 3.0E-03 | NA | | **3.0E-03** | Nervous system | Nervous system |
| | | | THALLIUM | NA | NA | | **NA** | 5.6E-02 | NA | | **5.6E-02** | Skin | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 1.2E-08 | 1.6E-08 | | **2.8E-08** | 2.1E-03 | 2.7E-03 | | **4.9E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 5.5E-07 | 6.6E-07 | | **1.2E-06** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 4.1E-06 | 4.9E-06 | | **9.0E-06** | 3.2E-02 | 3.8E-02 | | **7.0E-02** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 8.2E-07 | 9.9E-07 | | **1.8E-06** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 1.7E-08 | 2.1E-08 | | **3.8E-08** | NA | NA | | **NA** | NA | NA |
| | | | CHRYSENE | 8.3E-09 | 1.0E-08 | | **1.8E-08** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 4.2E-07 | 5.0E-07 | | **9.2E-07** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 1.1E-07 | 1.4E-07 | | **2.5E-07** | NA | NA | | **NA** | NA | NA |
| | | | **TICs** | | | | | | | | | | |
| | | | BENZO[J]FLUORANTHENE | 1.3E-06 | 1.6E-06 | | **2.9E-06** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | SL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 1.6E-06 | 2.9E-07 | | **1.8E-06** | 2.4E-02 | 4.5E-03 | | **2.9E-02** | Skin | Respiratory |
| | | | CHROMIUM | 5.1E-07 | 3.8E-06 | | **4.3E-06** | 7.9E-04 | 5.9E-03 | | **6.7E-03** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 6.6E-03 | 4.9E-04 | | **7.1E-03** | Endocrine | Endocrine |
| | | | CYANIDE | NA | NA | | **NA** | 6.8E-03 | 1.3E-03 | | **8.1E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 1.5E-02 | 2.8E-03 | | **1.8E-02** | Gastrointestinal | NA |
| | | | MANGANESE | NA | NA | | **NA** | 3.6E-02 | 1.7E-01 | | **2.1E-01** | Nervous system | Nervous system |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 2.7E-09 | 7.7E-07 | | **7.7E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 7.9E-08 | 3.4E-05 | | **3.5E-05** | 6.2E-04 | 2.7E-01 | | **2.7E-01** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 5.3E-09 | 1.3E-06 | | **1.3E-06** | NA | NA | | **NA** | NA | NA |
| | | | BIS(2-ETHYLHEXYL) PHTHALATE | 3.3E-09 | 4.5E-06 | | **4.5E-06** | 8.3E-05 | 1.1E-01 | | **1.1E-01** | Hepatic | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 2.7E-08 | 1.1E-05 | | **1.1E-05** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 3.5E-09 | 1.8E-06 | | **1.9E-06** | NA | NA | | **NA** | NA | NA |
| **Exposure Point Total - SL** | | | | 1.3E-05 | 6.7E-05 | 0.0E+00 | **8E-05** | 2.3E-01 | 6.1E-01 | 0.0E+00 | **8E-01** | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| | | | | | | | | **Total Organ HI (SL)** | | | | | |
| | | | | | | | | Developmental | | | 3E-01 | | |
| | | | | | | | | Endocrine | | | 2E-02 | | |
| | | | | | | | | Gastrointestinal | | | 3E-02 | | |
| | | | | | | | | Hematological | | | 4E-03 | | |
| | | | | | | | | Hepatic | | | 1E-01 | | |
| | | | | | | | | Immunological | | | 5E-03 | | |
| | | | | | | | | Nervous System | | | 2E-01 | | |
| | | | | | | | | None Observed | | | 1E-02 | | |
| | | | | | | | | Reproductive | | | 1E-02 | | |
| | | | | | | | | Skin | | | 1E-01 | | |
| Sediment | Sediment | BWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 9.5E-03 | NA | | **9.5E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 1.2E-02 | NA | | **1.2E-02** | Hematological | NA |
| | | | ARSENIC | 2.4E-05 | 1.1E-05 | | **3.5E-05** | 3.7E-01 | 1.7E-01 | | **5.4E-01** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | | **NA** | 8.7E-03 | 3.2E-03 | | **1.2E-02** | Renal | Renal |
| | | | CHROMIUM | 2.2E-05 | NA | | **2.2E-05** | 3.4E-02 | NA | | **3.4E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 3.6E-02 | NA | | **3.6E-02** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 2.9E-03 | NA | | **2.9E-03** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 1.6E-02 | NA | | **1.6E-02** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 3.9E-02 | NA | | **3.9E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 3.0E-03 | NA | | **3.0E-03** | Nervous system | Nervous system |
| | | | VANADIUM | NA | NA | | **NA** | 7.3E-03 | NA | | **7.3E-03** | Systemic | Respiratory |
| | | | ZINC | NA | NA | | **NA** | 2.4E-03 | NA | | **2.4E-03** | Hematological | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 1.5E-08 | 1.9E-08 | | **3.4E-08** | 2.6E-03 | 3.4E-03 | | **6.0E-03** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 3.7E-08 | 4.5E-08 | | **8.3E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 3.8E-07 | 4.6E-07 | | **8.4E-07** | 3.0E-03 | 3.6E-03 | | **6.5E-03** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 5.6E-08 | 6.8E-08 | | **1.2E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 5.5E-09 | 6.6E-09 | | **1.2E-08** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 7.9E-08 | 9.6E-08 | | **1.7E-07** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 2.1E-08 | 2.5E-08 | | **4.6E-08** | NA | NA | | **NA** | NA | NA |
| | | | NAPHTHALENE | NA | NA | | **NA** | 9.2E-05 | 1.1E-04 | | **2.0E-04** | Systemic | Respiratory |
| | | | **VOCs** | | | | | | | | | | |
| | | | TRICHLOROETHYLENE (TCE) | 4.0E-10 | NA | | **4.0E-10** | 8.7E-05 | NA | | **8.7E-05** | Developmental | Developmental |
| Surface Water | Surface Water | BWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 1.2E-03 | 2.2E-04 | | **1.4E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 2.7E-03 | 3.3E-03 | | **6.0E-03** | Hematological | NA |
| | | | ARSENIC | 6.1E-06 | 1.1E-06 | | **7.2E-06** | 9.4E-02 | 1.8E-02 | | **1.1E-01** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | | **NA** | 1.1E-03 | 4.3E-03 | | **5.5E-03** | Renal | Renal |
| | | | CHROMIUM | 8.9E-07 | 6.7E-06 | | **7.5E-06** | 1.4E-03 | 1.0E-02 | | **1.2E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 3.1E-03 | 2.3E-04 | | **3.3E-03** | Endocrine | Endocrine |
| | | | CYANIDE | NA | NA | | **NA** | 3.1E-03 | 5.8E-04 | | **3.7E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 8.6E-03 | 1.6E-03 | | **1.0E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 2.7E-03 | 1.3E-02 | | **1.5E-02** | Nervous system | Nervous system |
| | | | THALLIUM | NA | NA | | **NA** | 1.1E-01 | 2.1E-02 | | **1.4E-01** | Skin | NA |
| | | | VANADIUM | NA | NA | | **NA** | 4.5E-04 | 3.3E-03 | | **3.7E-03** | Systemic | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 1.3E-08 | 5.9E-06 | | **5.9E-06** | 1.0E-04 | 4.6E-02 | | **4.6E-02** | Developmental | Developmental |
| **Exposure Point Total - BWL** | | | | 5.3E-05 | 2.5E-05 | 0.0E+00 | **8E-05** | 7.8E-01 | 3.0E-01 | 0.0E+00 | **1E+00** | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| | | | | | | | | **Total Organ HI (BWL)** | | | | | |
| | | | | | | | | Developmental | | | 5E-02 | | |
| | | | | | | | | Endocrine | | | 4E-02 | | |
| | | | | | | | | Gastrointestinal | | | 5E-02 | | |
| | | | | | | | | Hematological | | | 2E-02 | | |
| | | | | | | | | Immunological | | | 6E-03 | | |
| | | | | | | | | Nervous System | | | 3E-02 | | |
| | | | | | | | | None Observed | | | 5E-02 | | |
| | | | | | | | | Renal | | | 2E-02 | | |
| | | | | | | | | Reproductive | | | 2E-02 | | |
| | | | | | | | | Skin | | | 8E-01 | | |
| | | | | | | | | Systemic | | | 1E-02 | | |
| Sediment | Sediment | KWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 1.0E-02 | NA | | **1.0E-02** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 3.3E-03 | NA | | **3.3E-03** | Hematological | NA |
| | | | ARSENIC | 7.3E-06 | 3.4E-06 | | **1.1E-05** | 1.1E-01 | 5.3E-02 | | **1.7E-01** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | | **NA** | 5.0E-03 | 1.9E-03 | | **6.9E-03** | Renal | Renal |
| | | | CHROMIUM | 2.4E-05 | NA | | **2.4E-05** | 3.7E-02 | NA | | **3.7E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 1.9E-02 | NA | | **1.9E-02** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 3.4E-03 | NA | | **3.4E-03** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 4.4E-03 | NA | | **4.4E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 2.5E-02 | NA | | **2.5E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 3.8E-03 | NA | | **3.8E-03** | Nervous system | Nervous system |
| | | | NICKEL | NA | NA | | **NA** | 1.2E-03 | NA | | **1.2E-03** | Systemic | Respiratory |
| | | | THALLIUM | NA | NA | | **NA** | 3.0E-02 | NA | | **3.0E-02** | Skin | NA |
| | | | VANADIUM | NA | NA | | **NA** | 3.4E-03 | NA | | **3.4E-03** | Systemic | Respiratory |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 3.0E-08 | 4.0E-08 | | **7.0E-08** | 5.3E-03 | 6.9E-03 | | **1.2E-02** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 3.2E-08 | 3.8E-08 | | **7.0E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 3.0E-07 | 3.6E-07 | | **6.6E-07** | 2.3E-03 | 2.8E-03 | | **5.1E-03** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 3.9E-08 | 4.6E-08 | | **8.5E-08** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 3.4E-09 | 4.1E-09 | | **7.4E-09** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 4.5E-08 | 5.5E-08 | | **1.0E-07** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 1.2E-08 | 1.4E-08 | | **2.5E-08** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | KWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 1.3E-03 | 2.4E-04 | | **1.5E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 8.5E-03 | 1.1E-02 | | **1.9E-02** | Hematological | NA |
| | | | ARSENIC | 3.3E-06 | 6.2E-07 | | **3.9E-06** | 5.1E-02 | 9.7E-03 | | **6.1E-02** | Skin | Respiratory |
| | | | CHROMIUM | 1.1E-06 | 7.9E-06 | | **9.0E-06** | 1.6E-03 | 1.2E-02 | | **1.4E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 4.9E-03 | 3.7E-04 | | **5.3E-03** | Endocrine | Endocrine |
| | | | CYANIDE | NA | NA | | **NA** | 2.8E-03 | 5.2E-04 | | **3.3E-03** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 4.7E-03 | 8.9E-04 | | **5.6E-03** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 3.1E-03 | 1.4E-02 | | **1.7E-02** | Nervous system | Nervous system |
| | | | THALLIUM | NA | NA | | **NA** | 5.4E-01 | 1.0E-01 | | **6.4E-01** | Skin | NA |
| **Exposure Point Total - KWL** | | | | 3.6E-05 | 1.3E-05 | 0.0E+00 | **5E-05** | 8.8E-01 | 2.1E-01 | 0.0E+00 | **1E+00** | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| | | | | | | | | **Total Organ HI (KWL)** | | | | | |
| | | | | | | | | Developmental | | | 5E-03 | | |
| | | | | | | | | Endocrine | | | 2E-02 | | |
| | | | | | | | | Gastrointestinal | | | 3E-02 | | |
| | | | | | | | | Hematological | | | 2E-02 | | |
| | | | | | | | | Immunological | | | 1E-02 | | |
| | | | | | | | | Nervous System | | | 3E-02 | | |
| | | | | | | | | None Observed | | | 5E-02 | | |
| | | | | | | | | Renal | | | 7E-03 | | |
| | | | | | | | | Reproductive | | | 8E-03 | | |
| | | | | | | | | Skin | | | 9E-01 | | |
| | | | | | | | | Systemic | | | 5E-03 | | |

**Table 9.6**
**Chemical Cancer Risks and Non-Cancer Hazards**
**Reasonable Maximum Exposure**
**Swimmer - Child**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Sediment | Sediment | SL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 1.1E-02 | NA | | **1.1E-02** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 2.2E-02 | NA | | **2.2E-02** | Hematological | NA |
| | | | ARSENIC | 2.9E-06 | 3.5E-07 | | **3.3E-06** | 7.6E-02 | 9.0E-03 | | **8.4E-02** | Skin | Respiratory |
| | | | CHROMIUM | 1.9E-05 | NA | | **1.9E-05** | 2.0E-02 | NA | | **2.0E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 7.9E-02 | NA | | **7.9E-02** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 9.7E-03 | NA | | **9.7E-03** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 1.7E-02 | NA | | **1.7E-02** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 4.4E-02 | NA | | **4.4E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 1.7E-02 | NA | | **1.7E-02** | Nervous system | Nervous system |
| | | | THALLIUM | NA | NA | | **NA** | 3.3E-01 | NA | | **3.3E-01** | Skin | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 4.3E-08 | 1.4E-08 | | **5.7E-08** | 1.2E-02 | 4.1E-03 | | **1.7E-02** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 4.7E-06 | 1.3E-06 | | **6.0E-06** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 3.5E-05 | 9.6E-06 | | **4.5E-05** | 1.9E-01 | 5.8E-02 | | **2.5E-01** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 7.1E-06 | 1.9E-06 | | **9.0E-06** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 1.5E-07 | 4.1E-08 | | **1.9E-07** | NA | NA | | **NA** | NA | NA |
| | | | CHRYSENE | 7.1E-08 | 1.9E-08 | | **9.1E-08** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 3.6E-06 | 9.8E-07 | | **4.6E-06** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 9.7E-07 | 2.7E-07 | | **1.2E-06** | NA | NA | | **NA** | NA | NA |
| | | | **TICs** | | | | | | | | | | |
| | | | BENZO[J]FLUORANTHENE | 4.7E-06 | 1.5E-06 | | **6.2E-06** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | SL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 6.3E-06 | 3.4E-07 | | **6.7E-06** | 1.6E-01 | 8.7E-03 | | **1.7E-01** | Skin | Respiratory |
| | | | CHROMIUM | 5.0E-06 | 8.6E-06 | | **1.4E-05** | 5.4E-03 | 1.1E-02 | | **1.7E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 4.5E-02 | 9.5E-04 | | **4.6E-02** | Endocrine | Endocrine |
| | | | CYANIDE | NA | NA | | **NA** | 4.7E-02 | 2.5E-03 | | **4.9E-02** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 1.0E-01 | 5.4E-03 | | **1.1E-01** | Gastrointestinal | NA |
| | | | MANGANESE | NA | NA | | **NA** | 2.5E-01 | 3.3E-01 | | **5.8E-01** | Nervous system | Nervous system |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 2.6E-08 | 1.5E-06 | | **1.5E-06** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 7.9E-07 | 6.7E-05 | | **6.7E-05** | 4.2E-03 | 4.4E-01 | | **4.5E-01** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 5.2E-08 | 2.6E-06 | | **2.6E-06** | NA | NA | | **NA** | NA | NA |
| | | | BIS(2-ETHYLHEXYL) PHTHALATE | 1.4E-08 | 4.4E-06 | | **4.4E-06** | 5.6E-04 | 1.8E-01 | | **1.8E-01** | Hepatic | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 2.7E-07 | 2.2E-05 | | **2.2E-05** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 3.5E-08 | 3.6E-06 | | **3.6E-06** | NA | NA | | **NA** | NA | NA |
| **Exposure Point Total - SL** | | | | 9.1E-05 | 1.3E-04 | 0.0E+00 | **2E-04** | 1.4E+00 | 1.1E+00 | 0.0E+00 | **2E+00** | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| | | | | | | | | **Total Organ HI (SL)** | | | | | |
| | | | | | | | | Developmental | | | 7E-01 | | |
| | | | | | | | | Endocrine | | | 1E-01 | | |
| | | | | | | | | Gastrointestinal | | | 2E-01 | | |
| | | | | | | | | Hematological | | | 2E-02 | | |
| | | | | | | | | Hepatic | | | 2E-01 | | |
| | | | | | | | | Immunological | | | 2E-02 | | |
| | | | | | | | | Nervous System | | | 6E-01 | | |
| | | | | | | | | None Observed | | | 4E-02 | | |
| | | | | | | | | Reproductive | | | 7E-02 | | |
| | | | | | | | | Skin | | | 6E-01 | | |
| Sediment | Sediment | BWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 5.6E-02 | NA | | **5.6E-02** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 7.0E-02 | NA | | **7.0E-02** | Hematological | NA |
| | | | ARSENIC | 8.4E-05 | 1.0E-05 | | **9.4E-05** | 2.2E+00 | 2.6E-01 | | **2.4E+00** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | | **NA** | 5.1E-02 | 4.9E-03 | | **5.6E-02** | Renal | Renal |
| | | | CHROMIUM | 1.9E-04 | NA | | **1.9E-04** | 2.0E-01 | NA | | **2.0E-01** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 2.1E-01 | NA | | **2.1E-01** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 1.7E-02 | NA | | **1.7E-02** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 9.7E-02 | NA | | **9.7E-02** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 2.3E-01 | NA | | **2.3E-01** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 1.8E-02 | NA | | **1.8E-02** | Nervous system | Nervous system |
| | | | VANADIUM | NA | NA | | **NA** | 4.3E-02 | NA | | **4.3E-02** | Systemic | Respiratory |
| | | | ZINC | NA | NA | | **NA** | 1.4E-02 | NA | | **1.4E-02** | Hematological | NA |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 5.3E-08 | 1.7E-08 | | **7.0E-08** | 1.5E-02 | 5.1E-03 | | **2.0E-02** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 3.2E-07 | 8.8E-08 | | **4.1E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 3.3E-06 | 9.0E-07 | | **4.2E-06** | 1.8E-02 | 5.4E-03 | | **2.3E-02** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 4.8E-07 | 1.3E-07 | | **6.2E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 4.7E-08 | 1.3E-08 | | **6.0E-08** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 6.8E-07 | 1.9E-07 | | **8.7E-07** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 1.8E-07 | 4.9E-08 | | **2.3E-07** | NA | NA | | **NA** | NA | NA |
| | | | NAPHTHALENE | NA | NA | | **NA** | 5.5E-04 | 1.7E-04 | | **7.1E-04** | Systemic | Respiratory |
| | | | **VOCs** | | | | | | | | | | |
| | | | TRICHLOROETHYLENE (TCE) | 2.3E-09 | NA | | **2.3E-09** | 5.1E-04 | NA | | **5.1E-04** | Developmental | Developmental |
| Surface Water | Surface Water | BWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 8.1E-03 | 4.3E-04 | | **8.5E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 1.8E-02 | 6.4E-03 | | **2.5E-02** | Hematological | NA |
| | | | ARSENIC | 2.5E-05 | 1.3E-06 | | **2.6E-05** | 6.4E-01 | 3.4E-02 | | **6.8E-01** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | | **NA** | 7.8E-03 | 8.3E-03 | | **1.6E-02** | Renal | Renal |
| | | | CHROMIUM | 8.8E-06 | 1.5E-05 | | **2.4E-05** | 9.4E-03 | 2.0E-02 | | **2.9E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 2.1E-02 | 4.5E-04 | | **2.2E-02** | Endocrine | Endocrine |
| | | | CYANIDE | NA | NA | | **NA** | 2.1E-02 | 1.1E-03 | | **2.2E-02** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 5.8E-02 | 3.1E-03 | | **6.2E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 1.8E-02 | 2.4E-02 | | **4.3E-02** | Nervous system | Nervous system |
| | | | THALLIUM | NA | NA | | **NA** | 7.8E-01 | 4.1E-02 | | **8.2E-01** | Skin | NA |
| | | | VANADIUM | NA | NA | | **NA** | 3.1E-03 | 6.3E-03 | | **9.4E-03** | Systemic | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 1.3E-07 | 1.1E-05 | | **1.1E-05** | 7.1E-04 | 7.5E-02 | | **7.6E-02** | Developmental | Developmental |
| **Exposure Point Total - BWL** | | | | 3.1E-04 | 3.9E-05 | 0.0E+00 | **3E-04** | 4.8E+00 | 5.0E-01 | 0.0E+00 | **5E+00** | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| | | | | | | | | **Total Organ HI (BWL)** | | | | | |
| | | | | | | | | Developmental | | | 1E-01 | | |
| | | | | | | | | Endocrine | | | 2E-01 | | |
| | | | | | | | | Gastrointestinal | | | 3E-01 | | |
| | | | | | | | | Hematological | | | 1E-01 | | |
| | | | | | | | | Immunological | | | 2E-02 | | |
| | | | | | | | | Nervous System | | | 1E-01 | | |
| | | | | | | | | None Observed | | | 2E-01 | | |
| | | | | | | | | Renal | | | 7E-02 | | |
| | | | | | | | | Reproductive | | | 1E-01 | | |
| | | | | | | | | Skin | | | 4E+00 | | |
| | | | | | | | | Systemic | | | 5E-02 | | |
| Sediment | Sediment | KWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 6.2E-02 | NA | | **6.2E-02** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 2.0E-02 | NA | | **2.0E-02** | Hematological | NA |
| | | | ARSENIC | 2.6E-05 | 3.1E-06 | | **2.9E-05** | 6.8E-01 | 8.0E-02 | | **7.6E-01** | Skin | Respiratory |
| | | | CADMIUM | NA | NA | | **NA** | 3.0E-02 | 2.8E-03 | | **3.2E-02** | Renal | Renal |
| | | | CHROMIUM | 2.1E-04 | NA | | **2.1E-04** | 2.2E-01 | NA | | **2.2E-01** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 1.1E-01 | NA | | **1.1E-01** | Endocrine | Endocrine |
| | | | COPPER | NA | NA | | **NA** | 2.0E-02 | NA | | **2.0E-02** | Gastrointestinal | NA |
| | | | CYANIDE | NA | NA | | **NA** | 2.6E-02 | NA | | **2.6E-02** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 1.5E-01 | NA | | **1.5E-01** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 2.3E-02 | NA | | **2.3E-02** | Nervous system | Nervous system |
| | | | NICKEL | NA | NA | | **NA** | 7.0E-03 | NA | | **7.0E-03** | Systemic | Respiratory |
| | | | THALLIUM | NA | NA | | **NA** | 1.8E-01 | NA | | **1.8E-01** | Skin | NA |
| | | | VANADIUM | NA | NA | | **NA** | 2.0E-02 | NA | | **2.0E-02** | Systemic | Respiratory |
| | | | **PEST/PCB** | | | | | | | | | | |
| | | | AROCLOR-1254 | 1.1E-07 | 3.6E-08 | | **1.4E-07** | 3.1E-02 | 1.0E-02 | | **4.2E-02** | Immunological | NA |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 2.7E-07 | 7.5E-08 | | **3.5E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 2.6E-06 | 7.0E-07 | | **3.3E-06** | 1.4E-02 | 4.2E-03 | | **1.8E-02** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 3.3E-07 | 9.1E-08 | | **4.2E-07** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(K)FLUORANTHENE | 2.9E-08 | 7.9E-09 | | **3.7E-08** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 3.9E-07 | 1.1E-07 | | **5.0E-07** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 9.9E-08 | 2.7E-08 | | **1.3E-07** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | KWL | **Metals** | | | | | | | | | | |
| | | | ALUMINUM | NA | NA | | **NA** | 8.6E-03 | 4.6E-04 | | **9.1E-03** | Nervous system | Nervous system |
| | | | ANTIMONY | NA | NA | | **NA** | 5.8E-02 | 2.1E-02 | | **7.9E-02** | Hematological | NA |
| | | | ARSENIC | 1.4E-05 | 7.2E-07 | | **1.4E-05** | 3.5E-01 | 1.9E-02 | | **3.7E-01** | Skin | Respiratory |
| | | | CHROMIUM | 1.0E-05 | 1.8E-05 | | **2.8E-05** | 1.1E-02 | 2.4E-02 | | **3.5E-02** | None Observed | Respiratory |
| | | | COBALT | NA | NA | | **NA** | 3.4E-02 | 7.1E-04 | | **3.4E-02** | Endocrine | Endocrine |
| | | | CYANIDE | NA | NA | | **NA** | 1.9E-02 | 1.0E-03 | | **2.0E-02** | Reproductive | Endocrine |
| | | | IRON | NA | NA | | **NA** | 3.2E-02 | 1.7E-03 | | **3.4E-02** | Gastrointestinal | NA |
| | | | LEAD | NA | NA | | **NA** | NA | NA | | **NA** | NA | NA |
| | | | MANGANESE | NA | NA | | **NA** | 2.1E-02 | 2.8E-02 | | **4.9E-02** | Nervous system | Nervous system |
| | | | THALLIUM | NA | NA | | **NA** | 3.7E+00 | 1.9E-01 | | **3.8E+00** | Skin | NA |
| **Exposure Point Total - KWL** | | | | 2.6E-04 | 2.3E-05 | 0.0E+00 | **3E-04** | 5.8E+00 | 3.9E-01 | 0.0E+00 | **6E+00** | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| | | | | | | | | **Total Organ HI (KWL)** | | | | | |
| | | | | | | | | Developmental | | | 2E-02 | | |
| | | | | | | | | Endocrine | | | 1E-01 | | |
| | | | | | | | | Gastrointestinal | | | 2E-01 | | |
| | | | | | | | | Hematological | | | 1E-01 | | |
| | | | | | | | | Immunological | | | 4E-02 | | |
| | | | | | | | | Nervous System | | | 1E-01 | | |
| | | | | | | | | None Observed | | | 3E-01 | | |
| | | | | | | | | Renal | | | 3E-02 | | |
| | | | | | | | | Reproductive | | | 5E-02 | | |
| | | | | | | | | Skin | | | 5E+00 | | |
| | | | | | | | | Systemic | | | 3E-02 | | |

**Table 9.7**
**Chemical Cancer Risks and Non-cancer Hazards**
**Reasonable Maximum Exposure**
**Angler - Adult**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | Non-carcinogenic Hazard Quotient | Target Organ |
|---|---|---|---|---|---|---|
| | | | | Ingestion | Ingestion | RfD |
| Fish | Tissue | KWL | **Metals** | | | |
| | | | ARSENIC | 1.8E-06 | 1.1E-02 | Skin |
| | | | CHROMIUM | 2.6E-04 | 4.7E-01 | None Observed |
| | | | LEAD | NA | NA | NA |
| | | | **PEST/PCB** | | | |
| | | | 4,4'-DDD | 3.4E-07 | 1.3E-01 | Hematological |
| | | | 4,4'-DDE | 6.3E-07 | 1.7E-02 | Hematological |
| | | | AROCLOR-1254 | 1.3E-05 | 8.7E-01 | Immunological |
| | | | AROCLOR-1260 | 5.4E-06 | 3.6E-01 | Immunological |
| **Exposure Point Total - KWL** | | | | **2.8E-04** | **1.9E+00** | |
| | | | | | **Total Organ HI (KWL)** | |
| | | | | | Hematological | 1E-01 |
| | | | | | Immunological | 1E+00 |
| | | | | | None Observed | 5E-01 |
| | | | | | Skin | 1E-02 |

**Table 9.8**
**Chemical Cancer Risks and Non-cancer Hazards**
**Reasonable Maximum Exposure**
**Angler - Adolescent**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | Non-carcinogenic Hazard Quotient | Target Organ |
|---|---|---|---|---|---|---|
| | | | | Ingestion | Ingestion | RfD |
| Fish | Tissue | KWL | **Metals** | | | |
| | | | ARSENIC | 8.4E-07 | 1.3E-02 | Skin |
| | | | CHROMIUM | 3.5E-04 | 5.5E-01 | None Observed |
| | | | LEAD | NA | NA | NA |
| | | | **PEST/PCB** | | | |
| | | | 4,4'-DDD | 1.6E-07 | 1.5E-01 | Hematological |
| | | | 4,4'-DDE | 2.9E-07 | 2.0E-02 | Hematological |
| | | | AROCLOR-1254 | 5.9E-06 | 1.0E+00 | Immunological |
| | | | AROCLOR-1260 | 2.4E-06 | 4.3E-01 | Immunological |
| **Exposure Point Total - KWL** | | | | **3.6E-04** | **2.2E+00** | |
| | | | | | **Total Organ HI (KWL)** | |
| | | | | | Hematological | 2E-01 |
| | | | | | Immunological | 1E+00 |
| | | | | | None Observed | 6E-01 |
| | | | | | Skin | 1E-02 |

**Table 9.9**
**Chemical Cancer Risks and Non-cancer Hazards**
**Reasonable Maximum Exposure**
**Angler - Child**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | Non-carcinogenic Hazard Quotient | Target Organ |
|---|---|---|---|---|---|---|
| | | | | Ingestion | Ingestion | RfD |
| Fish | Tissue | KWL | **Metals** | | | |
| | | | ARSENIC | 7.9E-07 | 2.0E-02 | Skin |
| | | | CHROMIUM | 8.1E-04 | 8.6E-01 | None Observed |
| | | | LEAD | NA | NA | NA |
| | | | **PEST/PCB** | | | |
| | | | 4,4'-DDD | 1.5E-07 | 2.4E-01 | Hematological |
| | | | 4,4'-DDE | 2.7E-07 | 3.1E-02 | Hematological |
| | | | AROCLOR-1254 | 5.5E-06 | 1.6E+00 | Immunological |
| | | | AROCLOR-1260 | 2.3E-06 | 6.7E-01 | Immunological |
| **Exposure Point Total - KWL** | | | | **8.2E-04** | **3.4E+00** | |
| | | | | | **Total Organ HI (KWL)** | |
| | | | | | Hematological | 3E-01 |
| | | | | | Immunological | 2E+00 |
| | | | | | None Observed | 9E-01 |
| | | | | | Skin | 2E-02 |

**Table 10.1**
**Risk Assessment Summary**
**Reasonable Maximum Exposure**
**Recreator - Adult**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Sediment | Sediment | SL | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 8.2E-07 | 1.3E-06 | | **2.1E-06** | 7.4E-03 | 1.2E-02 | | **1.9E-02** | Developmental | Developmental |
| | | | **TICs** | | | | | | | | | | |
| | | | BENZO[J]FLUORANTHENE | 8.1E-07 | 1.3E-06 | | **2.1E-06** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | SL | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | | 2.2E-06 | | **2.2E-06** | | 2.0E-02 | | **2.0E-02** | Developmental | Developmental |
| **Exposure Point Total - SL** | | | | 3.0E-06 | 7.7E-06 | 0.0E+00 | **1E-05** | 3.2E-02 | 5.2E-02 | 0.0E+00 | **8E-02** | | |
| Soil | Soil | BWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 2.0E-05 | 4.2E-06 | 7.8E-09 | **2.4E-05** | 1.2E-01 | 2.5E-02 | 3.2E-04 | **1.4E-01** | Skin | Respiratory |
| | | | CHROMIUM | 3.8E-06 | NA | 5.3E-08 | **3.9E-06** | 6.9E-03 | NA | 1.7E-05 | **6.9E-03** | None Observed | Respiratory |
| Sediment | Sediment | BWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 1.4E-05 | 8.6E-06 | | **2.3E-05** | 8.5E-02 | 5.2E-02 | | **1.4E-01** | Skin | Respiratory |
| | | | CHROMIUM | 4.3E-06 | NA | | **4.3E-06** | 7.8E-03 | NA | | **7.8E-03** | None Observed | Respiratory |
| **Exposure Point Total - BWL** | | | | 4.2E-05 | 1.4E-05 | 6.1E-08 | **6E-05** | 3.1E-01 | 8.7E-02 | 1.8E-03 | **4E-01** | | |
| Soil | Soil | HC | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 8.5E-05 | 1.8E-05 | 3.4E-08 | **1.0E-04** | 5.1E-01 | 1.1E-01 | 1.4E-03 | **6.2E-01** | Skin | Respiratory |
| | | | CHROMIUM | 6.1E-05 | NA | 8.5E-07 | **6.2E-05** | 1.1E-01 | NA | 2.7E-04 | **1.1E-01** | None Observed | Respiratory |
| Sediment | Sediment | HC | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 1.9E-05 | 1.2E-05 | | **3.1E-05** | 1.2E-01 | 7.0E-02 | | **1.9E-01** | Skin | Respiratory |
| | | | CHROMIUM | 1.2E-05 | NA | | **1.2E-05** | 2.2E-02 | NA | | **2.2E-02** | None Observed | Respiratory |
| Surface Water | Surface Water | HC | **Metals** | | | | | | | | | | |
| | | | CHROMIUM | | 7.9E-06 | | **7.9E-06** | | 1.4E-02 | | **1.4E-02** | None Observed | Respiratory |
| **Exposure Point Total - HC** | | | | 1.8E-04 | 3.9E-05 | 9.0E-07 | **2E-04** | 9.6E-01 | 2.1E-01 | 1.1E-01 | **1E+00** | | |
| Soil | Soil | KWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 1.4E-06 | 3.1E-07 | 5.7E-10 | **1.8E-06** | 8.6E-03 | 1.8E-03 | 2.4E-05 | **1.0E-02** | Skin | Respiratory |
| | | | CHROMIUM | 1.8E-06 | NA | 2.4E-08 | **1.8E-06** | 3.2E-03 | NA | 7.8E-06 | **3.2E-03** | None Observed | Respiratory |
| Sediment | Sediment | KWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 4.4E-06 | 2.7E-06 | | **7.1E-06** | 2.7E-02 | 1.6E-02 | | **4.3E-02** | Skin | Respiratory |
| | | | CHROMIUM | 4.8E-06 | NA | | **4.8E-06** | 8.7E-03 | NA | | **8.7E-03** | None Observed | Respiratory |
| **Exposure Point Total - KWL** | | | | 1.3E-05 | 3.6E-06 | 2.5E-08 | **2E-05** | 1.1E-01 | 2.9E-02 | 9.2E-04 | **1E-01** | | |

**Table 10.2**
**Risk Assessment Summary**
**Reasonable Maximum Exposure**
**Recreator - Adolescent**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Sediment | Sediment | SL | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 1.7E-06 | 2.1E-06 | | **3.8E-06** | 1.3E-02 | 1.6E-02 | | **2.9E-02** | Developmental | Developmental |
| | | | **TICs** | | | | | | | | | | |
| | | | BENZO[J]FLUORANTHENE | 5.6E-07 | 6.8E-07 | | **1.2E-06** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | SL | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | | 3.5E-06 | | **3.5E-06** | | 2.8E-02 | | **2.8E-02** | Developmental | Developmental |
| | | | DIBENZO(A,H)ANTHRACENE | | 1.2E-06 | | **1.2E-06** | | NA | | **NA** | NA | NA |
| **Exposure Point Total - SL** | | | | 4.4E-06 | 9.7E-06 | 0.0E+00 | **1E-05** | 5.9E-02 | 7.2E-02 | 0.0E+00 | **1E-01** | | |
| Soil | Soil | BWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 1.4E-05 | 2.2E-06 | 3.0E-09 | **1.6E-05** | 2.1E-01 | 3.5E-02 | 3.2E-04 | **2.5E-01** | Skin | Respiratory |
| | | | CHROMIUM | 8.0E-06 | NA | 6.1E-08 | **8.1E-06** | 1.2E-02 | NA | 1.7E-05 | **1.2E-02** | None Observed | Respiratory |
| Sediment | Sediment | BWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 9.9E-06 | 4.6E-06 | | **1.5E-05** | 1.5E-01 | 7.2E-02 | | **2.3E-01** | Skin | Respiratory |
| | | | CHROMIUM | 9.1E-06 | NA | | **9.1E-06** | 1.4E-02 | NA | | **1.4E-02** | None Observed | Respiratory |
| **Exposure Point Total - BWL** | | | | 4.1E-05 | 8.3E-06 | 6.5E-08 | **5E-05** | 5.6E-01 | 1.2E-01 | 1.8E-03 | **7E-01** | | |
| Soil | Soil | HC | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 5.9E-05 | 9.6E-06 | 1.3E-08 | **6.9E-05** | 9.2E-01 | 1.5E-01 | 1.4E-03 | **1.1E+00** | Skin | Respiratory |
| | | | CHROMIUM | 1.3E-04 | NA | 9.8E-07 | **1.3E-04** | 2.0E-01 | NA | 2.7E-04 | **2.0E-01** | None Observed | Respiratory |
| Sediment | Sediment | HC | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 1.3E-05 | 6.3E-06 | | **2.0E-05** | 2.1E-01 | 9.7E-02 | | **3.1E-01** | Skin | Respiratory |
| | | | CHROMIUM | 2.6E-05 | NA | | **2.6E-05** | 4.0E-02 | NA | | **4.0E-02** | None Observed | Respiratory |
| Surface Water | Surface Water | HC | **Metals** | | | | | | | | | | |
| | | | CHROMIUM | | 1.3E-05 | | **1.3E-05** | | 2.0E-02 | | **2.0E-02** | None Observed | Respiratory |
| **Exposure Point Total - HC** | | | | 2.3E-04 | 2.9E-05 | 1.0E-06 | **3E-04** | 1.7E+00 | 3.0E-01 | 1.1E-01 | **2E+00** | | |
| | | | | | | | | **Total Organ HI (HC)** | | | | | |
| | | | | | | | | Skin | | | 1E+00 | | |
| Soil | Soil | KWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 1.0E-06 | 1.6E-07 | 2.2E-10 | **1.2E-06** | 1.6E-02 | 2.5E-03 | 2.4E-05 | **1.8E-02** | Skin | Respiratory |
| | | | CHROMIUM | 3.7E-06 | NA | 2.8E-08 | **3.7E-06** | 5.7E-03 | NA | 7.8E-06 | **5.7E-03** | None Observed | Respiratory |
| Sediment | Sediment | KWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 3.1E-06 | 1.4E-06 | | **4.5E-06** | 4.8E-02 | 2.2E-02 | | **7.0E-02** | Skin | Respiratory |
| | | | CHROMIUM | 1.0E-05 | NA | | **1.0E-05** | 1.6E-02 | NA | | **1.6E-02** | None Observed | Respiratory |
| **Exposure Point Total - KWL** | | | | 1.8E-05 | 2.5E-06 | 2.8E-08 | **2E-05** | 2.0E-01 | 4.1E-02 | 9.2E-04 | **2E-01** | | |

**Table 10.3**
**Risk Assessment Summary**
**Reasonable Maximum Exposure**
**Recreator - Child**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Sediment | Sediment | SL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 1.2E-06 | 1.4E-07 | | **1.4E-06** | 3.2E-02 | 3.8E-03 | | **3.5E-02** | Skin | Respiratory |
| | | | CHROMIUM | 8.0E-06 | NA | | **8.0E-06** | 8.6E-03 | NA | | **8.6E-03** | None Observed | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 2.0E-06 | 5.4E-07 | | **2.5E-06** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 1.5E-05 | 4.0E-06 | | **1.9E-05** | 7.8E-02 | 2.4E-02 | | **1.0E-01** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 3.0E-06 | 8.1E-07 | | **3.8E-06** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 1.5E-06 | 4.1E-07 | | **1.9E-06** | NA | NA | | **NA** | NA | NA |
| | | | **TICs** | | | | | | | | | | |
| | | | BENZO[J]FLUORANTHENE | 2.0E-06 | 6.1E-07 | | **2.6E-06** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | SL | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | | 6.9E-06 | | **6.9E-06** | | 4.2E-02 | | **4.2E-02** | Developmental | Developmental |
| | | | DIBENZO(A,H)ANTHRACENE | | 2.2E-06 | | **2.2E-06** | | NA | | **NA** | NA | NA |
| **Exposure Point Total - SL** | | | | 3.3E-05 | 1.8E-05 | 0.0E+00 | **5E-05** | 3.5E-01 | 1.1E-01 | 0.0E+00 | **5E-01** | | |
| Soil | Soil | BWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 4.9E-05 | 5.8E-06 | 1.8E-09 | **5.4E-05** | 1.3E+00 | 1.5E-01 | 3.2E-04 | **1.4E+00** | Skin | Respiratory |
| | | | CHROMIUM | 6.9E-05 | NA | 6.6E-08 | **6.9E-05** | 7.4E-02 | NA | 1.7E-05 | **7.4E-02** | None Observed | Respiratory |
| | | | THALLIUM | NA | NA | NA | **NA** | 4.7E-01 | NA | NA | **4.7E-01** | Skin | NA |
| Sediment | Sediment | BWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 3.5E-05 | 4.2E-06 | | **3.9E-05** | 9.1E-01 | 1.1E-01 | | **1.0E+00** | Skin | Respiratory |
| | | | CHROMIUM | 7.8E-05 | NA | | **7.8E-05** | 8.3E-02 | NA | | **8.3E-02** | None Observed | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 1.4E-06 | 3.8E-07 | | **1.8E-06** | 7.3E-03 | 2.3E-03 | | **9.6E-03** | Developmental | Developmental |
| Surface Water | Surface Water | BWL | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | | 1.2E-06 | | **1.2E-06** | | 7.1E-03 | | **7.1E-03** | Developmental | Developmental |
| **Exposure Point Total - BWL** | | | | 2.3E-04 | 1.3E-05 | 6.7E-08 | **2E-04** | 3.3E+00 | 2.8E-01 | 1.8E-03 | **4E+00** | | |
| | | | | | | | | **Total Organ HI (BWL)** | | | | | |
| | | | | | | | | Skin | | | 3E+00 | | |
| Soil | Soil | HC | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 2.1E-04 | 2.5E-05 | 7.8E-09 | **2.3E-04** | 5.4E+00 | 6.5E-01 | 1.4E-03 | **6.1E+00** | Skin | Respiratory |
| | | | CHROMIUM | 1.1E-03 | NA | 1.0E-06 | **1.1E-03** | 1.2E+00 | NA | 2.7E-04 | **1.2E+00** | None Observed | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 6.0E-06 | 1.6E-06 | 2.0E-11 | **7.6E-06** | 3.2E-02 | 9.9E-03 | 3.7E-05 | **4.2E-02** | Developmental | Developmental |
| | | | DIBENZO(A,H)ANTHRACENE | 1.0E-06 | 2.8E-07 | 3.4E-12 | **1.3E-06** | NA | NA | NA | **NA** | NA | NA |
| Sediment | Sediment | HC | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 4.8E-05 | 5.7E-06 | | **5.3E-05** | 1.2E+00 | 1.5E-01 | | **1.4E+00** | Skin | Respiratory |
| | | | CHROMIUM | 2.2E-04 | NA | | **2.2E-04** | 2.4E-01 | NA | | **2.4E-01** | None Observed | Respiratory |
| Surface Water | Surface Water | HC | **Metals** | | | | | | | | | | |
| | | | CHROMIUM | | 2.5E-05 | | **2.5E-05** | | 3.0E-02 | | **3.0E-02** | None Observed | Respiratory |
| **Exposure Point Total - HC** | | | | 1.6E-03 | 5.8E-05 | 1.1E-06 | **2E-03** | 1.0E+01 | 8.9E-01 | 1.1E-01 | **1E+01** | | |
| | | | | | | | | **Total Organ HI (HC)** | | | | | |
| | | | | | | | | None Observed | | | 1E+00 | | |
| | | | | | | | | Skin | | | 8E+00 | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Soil | Soil | KWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 3.6E-06 | 4.2E-07 | 1.3E-10 | **4.0E-06** | 9.2E-02 | 1.1E-02 | 2.4E-05 | **1.0E-01** | Skin | Respiratory |
| | | | CHROMIUM | 3.2E-05 | NA | 3.0E-08 | **3.2E-05** | 3.4E-02 | NA | 7.8E-06 | **3.4E-02** | None Observed | Respiratory |
| Sediment | Sediment | KWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 1.1E-05 | 1.3E-06 | | **1.2E-05** | 2.8E-01 | 3.4E-02 | | **3.2E-01** | Skin | Respiratory |
| | | | CHROMIUM | 8.7E-05 | NA | | **8.7E-05** | 9.2E-02 | NA | | **9.2E-02** | None Observed | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 1.1E-06 | 2.9E-07 | | **1.4E-06** | 5.7E-03 | 1.8E-03 | | **7.5E-03** | Developmental | Developmental |
| Surface Water | Surface Water | KWL | **Metals** | | | | | | | | | | |
| | | | CHROMIUM | | 1.1E-06 | | **1.1E-06** | | 1.4E-03 | | **1.4E-03** | None Observed | Respiratory |
| **Exposure Point Total - KWL** | | | | 1.3E-04 | 3.5E-06 | 3.0E-08 | **1E-04** | 1.2E+00 | 6.9E-02 | 9.2E-04 | **1E+00** | | |

**Table 10.4**
**Risk Assessment Summary**
**Reasonable Maximum Exposure**
**Swimmer - Adult**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Sediment | Sediment | SL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 1.2E-06 | 7.1E-07 | | **1.9E-06** | 7.1E-03 | 4.3E-03 | | **1.1E-02** | Skin | Respiratory |
| | | | CHROMIUM | 1.1E-06 | NA | | **1.1E-06** | 1.9E-03 | NA | | **1.9E-03** | None Observed | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 2.0E-06 | 3.1E-06 | | **5.0E-06** | 1.8E-02 | 2.8E-02 | | **4.5E-02** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 3.9E-07 | 6.2E-07 | | **1.0E-06** | NA | NA | | **NA** | NA | NA |
| | | | **TICs** | | | | | | | | | | |
| | | | BENZO[J]FLUORANTHENE | 1.9E-06 | 3.0E-06 | | **4.9E-06** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | SL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 2.8E-06 | 7.0E-07 | | **3.5E-06** | 1.7E-02 | 4.2E-03 | | **2.1E-02** | Skin | Respiratory |
| | | | CHROMIUM | 3.0E-07 | 3.1E-06 | | **3.4E-06** | 5.4E-04 | 5.5E-03 | | **6.0E-03** | None Observed | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 4.7E-08 | 2.6E-05 | | **2.6E-05** | 4.3E-04 | 2.3E-01 | | **2.3E-01** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 3.2E-09 | 1.0E-06 | | **1.0E-06** | NA | NA | | **NA** | NA | NA |
| | | | BIS(2-ETHYLHEXYL) PHTHALATE | 5.9E-09 | 1.0E-05 | | **1.0E-05** | 5.7E-05 | 9.7E-02 | | **9.7E-02** | Hepatic | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 1.6E-08 | 8.4E-06 | | **8.5E-06** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 2.1E-09 | 1.4E-06 | | **1.4E-06** | NA | NA | | **NA** | NA | NA |
| **Exposure Point Total - SL** | | | | 1.0E-05 | 6.0E-05 | 0.0E+00 | **7E-05** | 1.4E-01 | 5.4E-01 | 0.0E+00 | **7E-01** | | |
| Sediment | Sediment | BWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 3.4E-05 | 2.1E-05 | | **5.5E-05** | 2.0E-01 | 1.2E-01 | | **3.3E-01** | Skin | Respiratory |
| | | | CHROMIUM | 1.0E-05 | NA | | **1.0E-05** | 1.9E-02 | NA | | **1.9E-02** | None Observed | Respiratory |
| Surface Water | Surface Water | BWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 1.1E-05 | 2.7E-06 | | **1.4E-05** | 6.5E-02 | 1.6E-02 | | **8.2E-02** | Skin | Respiratory |
| | | | CHROMIUM | 5.3E-07 | 5.4E-06 | | **5.9E-06** | 9.5E-04 | 9.6E-03 | | **1.1E-02** | None Observed | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 8.1E-09 | 4.4E-06 | | **4.4E-06** | 7.2E-05 | 4.0E-02 | | **4.0E-02** | Developmental | Developmental |
| **Exposure Point Total - BWL** | | | | 5.6E-05 | 3.4E-05 | 0.0E+00 | **9E-05** | 4.6E-01 | 2.4E-01 | 0.0E+00 | **7E-01** | | |
| Sediment | Sediment | KWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 1.1E-05 | 6.4E-06 | | **1.7E-05** | 6.3E-02 | 3.8E-02 | | **1.0E-01** | Skin | Respiratory |
| | | | CHROMIUM | 1.2E-05 | NA | | **1.2E-05** | 2.1E-02 | NA | | **2.1E-02** | None Observed | Respiratory |
| Surface Water | Surface Water | KWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 5.9E-06 | 1.5E-06 | | **7.4E-06** | 3.6E-02 | 9.0E-03 | | **4.4E-02** | Skin | Respiratory |
| | | | CHROMIUM | 6.3E-07 | 6.4E-06 | | **7.0E-06** | 1.1E-03 | 1.1E-02 | | **1.3E-02** | None Observed | Respiratory |
| **Exposure Point Total - KWL** | | | | 2.9E-05 | 1.5E-05 | 0.0E+00 | **4E-05** | 5.7E-01 | 1.9E-01 | 0.0E+00 | **8E-01** | | |

**Table 10.5**
**Risk Assessment Summary**
**Reasonable Maximum Exposure**
**Swimmer - Adolescent**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Sediment | Sediment | SL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 8.2E-07 | 3.8E-07 | | **1.2E-06** | 1.3E-02 | 5.9E-03 | | **1.9E-02** | Skin | Respiratory |
| | | | CHROMIUM | 2.2E-06 | NA | | **2.2E-06** | 3.5E-03 | NA | | **3.5E-03** | None Observed | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 5.5E-07 | 6.6E-07 | | **1.2E-06** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 4.1E-06 | 4.9E-06 | | **9.0E-06** | 3.2E-02 | 3.8E-02 | | **7.0E-02** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 8.2E-07 | 9.9E-07 | | **1.8E-06** | NA | NA | | **NA** | NA | NA |
| | | | **TICs** | | | | | | | | | | |
| | | | BENZO[J]FLUORANTHENE | 1.3E-06 | 1.6E-06 | | **2.9E-06** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | SL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 1.6E-06 | 2.9E-07 | | **1.8E-06** | 2.4E-02 | 4.5E-03 | | **2.9E-02** | Skin | Respiratory |
| | | | CHROMIUM | 5.1E-07 | 3.8E-06 | | **4.3E-06** | 7.9E-04 | 5.9E-03 | | **6.7E-03** | None Observed | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 7.9E-08 | 3.4E-05 | | **3.5E-05** | 6.2E-04 | 2.7E-01 | | **2.7E-01** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 5.3E-09 | 1.3E-06 | | **1.3E-06** | NA | NA | | **NA** | NA | NA |
| | | | BIS(2-ETHYLHEXYL) PHTHALATE | 3.3E-09 | 4.5E-06 | | **4.5E-06** | 8.3E-05 | 1.1E-01 | | **1.1E-01** | Hepatic | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 2.7E-08 | 1.1E-05 | | **1.1E-05** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 3.5E-09 | 1.8E-06 | | **1.9E-06** | NA | NA | | **NA** | NA | NA |
| **Exposure Point Total - SL** | | | | 1.3E-05 | 6.7E-05 | 0.0E+00 | **8E-05** | 2.3E-01 | 6.1E-01 | 0.0E+00 | **8E-01** | | |
| Sediment | Sediment | BWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 2.4E-05 | 1.1E-05 | | **3.5E-05** | 3.7E-01 | 1.7E-01 | | **5.4E-01** | Skin | Respiratory |
| | | | CHROMIUM | 2.2E-05 | NA | | **2.2E-05** | 3.4E-02 | NA | | **3.4E-02** | None Observed | Respiratory |
| Surface Water | Surface Water | BWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 6.1E-06 | 1.1E-06 | | **7.2E-06** | 9.4E-02 | 1.8E-02 | | **1.1E-01** | Skin | Respiratory |
| | | | CHROMIUM | 8.9E-07 | 6.7E-06 | | **7.5E-06** | 1.4E-03 | 1.0E-02 | | **1.2E-02** | None Observed | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 1.3E-08 | 5.9E-06 | | **5.9E-06** | 1.0E-04 | 4.6E-02 | | **4.6E-02** | Developmental | Developmental |
| **Exposure Point Total - BWL** | | | | 5.3E-05 | 2.5E-05 | 0.0E+00 | **8E-05** | 7.8E-01 | 3.0E-01 | 0.0E+00 | **1E+00** | | |
| Sediment | Sediment | KWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 7.3E-06 | 3.4E-06 | | **1.1E-05** | 1.1E-01 | 5.3E-02 | | **1.7E-01** | Skin | Respiratory |
| | | | CHROMIUM | 2.4E-05 | NA | | **2.4E-05** | 3.7E-02 | NA | | **3.7E-02** | None Observed | Respiratory |
| Surface Water | Surface Water | KWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 3.3E-06 | 6.2E-07 | | **3.9E-06** | 5.1E-02 | 9.7E-03 | | **6.1E-02** | Skin | Respiratory |
| | | | CHROMIUM | 1.1E-06 | 7.9E-06 | | **9.0E-06** | 1.6E-03 | 1.2E-02 | | **1.4E-02** | None Observed | Respiratory |
| **Exposure Point Total - KWL** | | | | 3.6E-05 | 1.3E-05 | 0.0E+00 | **5E-05** | 8.8E-01 | 2.1E-01 | 0.0E+00 | **1E+00** | | |

**Table 10.6**
**Risk Assessment Summary**
**Reasonable Maximum Exposure**
**Swimmer - Child**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Sediment | Sediment | SL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 2.9E-06 | 3.5E-07 | | **3.3E-06** | 7.6E-02 | 9.0E-03 | | **8.4E-02** | Skin | Respiratory |
| | | | CHROMIUM | 1.9E-05 | NA | | **1.9E-05** | 2.0E-02 | NA | | **2.0E-02** | None Observed | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 4.7E-06 | 1.3E-06 | | **6.0E-06** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 3.5E-05 | 9.6E-06 | | **4.5E-05** | 1.9E-01 | 5.8E-02 | | **2.5E-01** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 7.1E-06 | 1.9E-06 | | **9.0E-06** | NA | NA | | **NA** | NA | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 3.6E-06 | 9.8E-07 | | **4.6E-06** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 9.7E-07 | 2.7E-07 | | **1.2E-06** | NA | NA | | **NA** | NA | NA |
| | | | **TICs** | | | | | | | | | | |
| | | | BENZO[J]FLUORANTHENE | 4.7E-06 | 1.5E-06 | | **6.2E-06** | NA | NA | | **NA** | NA | NA |
| Surface Water | Surface Water | SL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 6.3E-06 | 3.4E-07 | | **6.7E-06** | 1.6E-01 | 8.7E-03 | | **1.7E-01** | Skin | Respiratory |
| | | | CHROMIUM | 5.0E-06 | 8.6E-06 | | **1.4E-05** | 5.4E-03 | 1.1E-02 | | **1.7E-02** | None Observed | Respiratory |
| | | | MANGANESE | NA | NA | | **NA** | 2.5E-01 | 3.3E-01 | | **5.8E-01** | Nervous system | Nervous system |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)ANTHRACENE | 2.6E-08 | 1.5E-06 | | **1.5E-06** | NA | NA | | **NA** | NA | NA |
| | | | BENZO(A)PYRENE | 7.9E-07 | 6.7E-05 | | **6.7E-05** | 4.2E-03 | 4.4E-01 | | **4.5E-01** | Developmental | Developmental |
| | | | BENZO(B)FLUORANTHENE | 5.2E-08 | 2.6E-06 | | **2.6E-06** | NA | NA | | **NA** | NA | NA |
| | | | BIS(2-ETHYLHEXYL) PHTHALATE | 1.4E-08 | 4.4E-06 | | **4.4E-06** | 5.6E-04 | 1.8E-01 | | **1.8E-01** | Hepatic | NA |
| | | | DIBENZO(A,H)ANTHRACENE | 2.7E-07 | 2.2E-05 | | **2.2E-05** | NA | NA | | **NA** | NA | NA |
| | | | INDENO(1,2,3-CD)PYRENE | 3.5E-08 | 3.6E-06 | | **3.6E-06** | NA | NA | | **NA** | NA | NA |
| **Exposure Point Total - SL** | | | | 9.1E-05 | 1.3E-04 | 0.0E+00 | **2E-04** | 1.4E+00 | 1.1E+00 | 0.0E+00 | **2E+00** | | |
| Sediment | Sediment | BWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 8.4E-05 | 1.0E-05 | | **9.4E-05** | 2.2E+00 | 2.6E-01 | | **2.4E+00** | Skin | Respiratory |
| | | | CHROMIUM | 1.9E-04 | NA | | **1.9E-04** | 2.0E-01 | NA | | **2.0E-01** | None Observed | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 3.3E-06 | 9.0E-07 | | **4.2E-06** | 1.8E-02 | 5.4E-03 | | **2.3E-02** | Developmental | Developmental |
| Surface Water | Surface Water | BWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 2.5E-05 | 1.3E-06 | | **2.6E-05** | 6.4E-01 | 3.4E-02 | | **6.8E-01** | Skin | Respiratory |
| | | | CHROMIUM | 8.8E-06 | 1.5E-05 | | **2.4E-05** | 9.4E-03 | 2.0E-02 | | **2.9E-02** | None Observed | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 1.3E-07 | 1.1E-05 | | **1.1E-05** | 7.1E-04 | 7.5E-02 | | **7.6E-02** | Developmental | Developmental |
| **Exposure Point Total - BWL** | | | | 3.1E-04 | 3.9E-05 | 0.0E+00 | **3E-04** | 4.8E+00 | 5.0E-01 | 0.0E+00 | **5E+00** | | |
| | | | | | | | | **Total Organ HI (BWL)** | | | | | |
| | | | | | | | | Skin | | | 4E+00 | | |

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | | | | Non-carcinogenic Hazard Quotient | | | | Target Organ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Total | Ingestion | Dermal | Inhalation | Total | RfD | RfC |
| Sediment | Sediment | KWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 2.6E-05 | 3.1E-06 | | **2.9E-05** | 6.8E-01 | 8.0E-02 | | **7.6E-01** | Skin | Respiratory |
| | | | CHROMIUM | 2.1E-04 | NA | | **2.1E-04** | 2.2E-01 | NA | | **2.2E-01** | None Observed | Respiratory |
| | | | **SVOCs** | | | | | | | | | | |
| | | | BENZO(A)PYRENE | 2.6E-06 | 7.0E-07 | | **3.3E-06** | 1.4E-02 | 4.2E-03 | | **1.8E-02** | Developmental | Developmental |
| Surface Water | Surface Water | KWL | **Metals** | | | | | | | | | | |
| | | | ARSENIC | 1.4E-05 | 7.2E-07 | | **1.4E-05** | 3.5E-01 | 1.9E-02 | | **3.7E-01** | Skin | Respiratory |
| | | | CHROMIUM | 1.0E-05 | 1.8E-05 | | **2.8E-05** | 1.1E-02 | 2.4E-02 | | **3.5E-02** | None Observed | Respiratory |
| | | | THALLIUM | NA | NA | | **NA** | 3.7E+00 | 1.9E-01 | | **3.8E+00** | Skin | NA |
| **Exposure Point Total - KWL** | | | | 2.6E-04 | 2.3E-05 | 0.0E+00 | **3E-04** | 5.8E+00 | 3.9E-01 | 0.0E+00 | **6E+00** | | |
| | | | | | | | | **Total Organ HI (KWL)** | | | | | |
| | | | | | | | | Skin | | | 5E+00 | | |

**Table 10.7**
**Risk Assessment Summary**
**Reasonable Maximum Exposure**
**Angler - Adult**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | Non-carcinogenic Hazard Quotient | Target Organ |
|---|---|---|---|---|---|---|
| | | | | Ingestion | Ingestion | RfD |
| Fish | Tissue | KWL | **Metals** | | | |
| | | | ARSENIC | 1.8E-06 | 1.1E-02 | Skin |
| | | | CHROMIUM | 2.6E-04 | 4.7E-01 | None Observed |
| | | | **PEST/PCB** | | | |
| | | | AROCLOR-1254 | 1.3E-05 | 8.7E-01 | Immunological |
| | | | AROCLOR-1260 | 5.4E-06 | 3.6E-01 | Immunological |
| **Exposure Point Total - KWL** | | | | **2.8E-04** | **1.9E+00** | |
| | | | | | **Total Organ HI (KWL)** | |
| | | | | | Immunological | 1E+00 |

**Table 10.8**
**Risk Assessment Summary**
**Reasonable Maximum Exposure**
**Angler - Adolescent**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | Non-carcinogenic Hazard Quotient | Target Organ |
|---|---|---|---|---|---|---|
| | | | | Ingestion | Ingestion | RfD |
| Fish | Tissue | KWL | **Metals** | | | |
| | | | CHROMIUM | 3.5E-04 | 5.5E-01 | None Observed |
| | | | **PEST/PCB** | | | |
| | | | AROCLOR-1254 | 5.9E-06 | 1.0E+00 | Immunological |
| | | | AROCLOR-1260 | 2.4E-06 | 4.3E-01 | Immunological |
| **Exposure Point Total - KWL** | | | | **3.6E-04** | **2.2E+00** | |
| | | | | | **Total Organ HI (KWL)** | |
| | | | | | Immunological | 1E+00 |

**Table 10.9**
**Risk Assessment Summary**
**Reasonable Maximum Exposure**
**Angler - Child**

| Medium | Exposure Medium | Exposure Point | Chemical of Potential Concern | Carcinogenic Risk | Non-carcinogenic Hazard Quotient | Target Organ |
|---|---|---|---|---|---|---|
| | | | | Ingestion | Ingestion | RfD |
| Fish | Tissue | KWL | **Metals** | | | |
| | | | CHROMIUM | 8.1E-04 | 8.6E-01 | None Observed |
| | | | **PEST/PCB** | | | |
| | | | AROCLOR-1254 | 5.5E-06 | 1.6E+00 | Immunological |
| | | | AROCLOR-1260 | 2.3E-06 | 6.7E-01 | Immunological |
| **Exposure Point Total - KWL** | | | | **8.2E-04** | **3.4E+00** | |
| | | | | | **Total Organ HI (KWL)** | |
| | | | | | Immunological | 2E+00 |

## Table 11
## Summary of Total Cancer Risks and Non-cancer Hazards by Exposure Area

| Exposure Area | Adult Recreator | | Adolescent Recreator | | Child Recreator | | Adult Swimmer | | Adolescent Swimmer | | Child Swimmer | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard |
| SL | 1E-05 | 0.08 | 1E-05 | 0.1 | 5E-05 | 0.5 | 7E-05 | 0.7 | 8E-05 | 0.8 | **2E-04** | **2** |
| BWL | 6E-05 | 0.4 | 5E-05 | 0.7 | **2E-04** | **4** | 9E-05 | 0.7 | 8E-05 | 1 | **3E-04** | **5** |
| HC | **2E-04** | 1 | **3E-04** | **2** | **2E-03** | **11** | NA | NA | NA | NA | NA | NA |
| KWL | 2E-05 | 0.1 | 2E-05 | 0.2 | 1E-04 | 1 | 4E-05 | 0.8 | 5E-05 | 1 | **3E-04** | **6** |

| Exposure Area | Adult Angler | | Adolescent Angler | | Child Angler | |
|---|---|---|---|---|---|---|
| | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard |
| KWL | **3E-04** | **2** | **4E-04** | **2** | **8E-04** | **3** |

Notes:

**BOLD** – Cancer Risk >1 x $10^{-4}$ or Hazard Index > 1.

NA – Receptor not evaluated in this exposure area.

**Table 12**
**Risk Summary Detail**

| Receptor/Exposure Pathway | SL | | | BWL | | | HC | | | KWL | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Cancer Risk** | **Cancer Risk** | **Percent Contribution** | **Major Contributor** | **Cancer Risk** | **Percent Contribution** | **Major Contributor** | **Cancer Risk** | **Percent Contribution** | **Major Contributor** | **Cancer Risk** | **Percent Contribution** | **Major Contributor** |
| **Adult Recreator** | | | | | | | | | | | | |
| Incidental Ingestion of Soil | NA | | | 2.4E-05 | 42% | ARSENIC (84%) | 1.5E-04 | 67% | ARSENIC (58%) | 3.2E-06 | 20% | CHROMIUM (54%) |
| Dermal Contact with Soil | NA | | | 4.2E-06 | 7% | ARSENIC (99.7%) | 1.8E-05 | 8% | ARSENIC (98%) | 3.2E-07 | 2% | ARSENIC (95%) |
| Inhalation of Particulates | NA | | | 6.1E-08 | <1% | CHROMIUM (87%) | 9.0E-07 | <1% | CHROMIUM (95%) | 2.5E-08 | <1% | CHROMIUM (97%) |
| Incidental Ingestion of Sediment | 3.0E-06 | 28% | BENZO(A)PYRENE (28%) | 1.9E-05 | 33% | ARSENIC (76%) | 3.2E-05 | 15% | ARSENIC (61%) | 9.4E-06 | 58% | CHROMIUM (52%) |
| Dermal Contact with Sediment | 3.5E-06 | 32% | BENZO(A)PYRENE (37%) | 8.8E-06 | 16% | ARSENIC (98%) | 1.2E-05 | 5% | ARSENIC (99%) | 2.8E-06 | 18% | ARSENIC (94%) |
| Dermal Contact with Surface Water | 4.3E-06 | 40% | BENZO(A)PYRENE (52%) | 8.3E-07 | 1% | BENZO(A)PYRENE (45%) | 8.4E-06 | 4% | CHROMIUM (94%) | 4.4E-07 | 3% | CHROMIUM (81%) |
| **Total Risk:** | **1E-05** | | | **6E-05** | | | **2E-04** | | | **2E-05** | | |
| **Adolescent Recreator** | | | | | | | | | | | | |
| Incidental Ingestion of Soil | NA | | | 2.2E-05 | 44% | ARSENIC (63%) | 1.9E-04 | 73% | CHROMIUM (68%) | 4.7E-06 | 23% | CHROMIUM (77%) |
| Dermal Contact with Soil | NA | | | 2.2E-06 | 5% | ARSENIC (99%) | 1.0E-05 | 4% | ARSENIC (96%) | 1.9E-07 | <1% | ARSENIC (86%) |
| Inhalation of Particulates | NA | | | 6.5E-08 | <1% | CHROMIUM (95%) | 1.0E-06 | <1% | CHROMIUM (98%) | 2.8E-08 | <1% | CHROMIUM (99%) |
| Incidental Ingestion of Sediment | 4.4E-06 | 31% | BENZO(A)PYRENE (39%) | 1.9E-05 | 39% | ARSENIC (52%) | 3.9E-05 | 15% | CHROMIUM (65%) | 1.3E-05 | 65% | CHROMIUM (75%) |
| Dermal Contact with Sediment | 3.9E-06 | 27% | BENZO(A)PYRENE (53%) | 4.9E-06 | 10% | ARSENIC (94%) | 6.4E-06 | 2% | ARSENIC (97%) | 1.7E-06 | 8% | ARSENIC (86%) |
| Dermal Contact with Surface Water | 5.9E-06 | 42% | BENZO(A)PYRENE (60%) | 1.2E-06 | 2% | BENZO(A)PYRENE (52%) | 1.3E-05 | 5% | CHROMIUM (98%) | 6.2E-07 | 3% | CHROMIUM (93%) |
| **Total Risk:** | **1E-05** | | | **5E-05** | | | **3E-04** | | | **2E-05** | | |
| **Child Recreator** | | | | | | | | | | | | |
| Incidental Ingestion of Soil | NA | | | 1.2E-04 | 48% | CHROMIUM (58%) | 1.3E-03 | 80% | CHROMIUM (83%) | 3.6E-05 | 26% | CHROMIUM (89%) |
| Dermal Contact with Soil | NA | | | 5.9E-06 | 2% | ARSENIC (98%) | 2.7E-05 | 2% | ARSENIC (91%) | 5.7E-07 | <1% | ARSENIC (75%) |
| Inhalation of Particulates | NA | | | 6.7E-08 | <1% | CHROMIUM (97%) | 1.1E-06 | <1% | CHROMIUM (99%) | 3.0E-08 | <1% | CHROMIUM (99%) |
| Incidental Ingestion of Sediment | 3.3E-05 | 65% | BENZO(A)PYRENE (45%) | 1.2E-04 | 47% | CHROMIUM (68%) | 2.7E-04 | 16% | CHROMIUM (82%) | 9.9E-05 | 72% | CHROMIUM (87%) |
| Dermal Contact with Sediment | 6.7E-06 | 13% | BENZO(A)PYRENE (60%) | 4.8E-06 | 2% | ARSENIC (88%) | 6.0E-06 | <1% | ARSENIC (95%) | 1.7E-06 | 1% | ARSENIC (75%) |
| Dermal Contact with Surface Water | 1.1E-05 | 22% | BENZO(A)PYRENE (63%) | 2.2E-06 | <1% | BENZO(A)PYRENE (54%) | 2.5E-05 | 2% | CHROMIUM (99%) | 1.2E-06 | <1% | CHROMIUM (96%) |
| **Total Risk:** | **5E-05** | | | **2E-04** | | | **2E-03** | | | **1E-04** | | |
| **Adult Swimmer** | | | | | | | | | | | | |
| Incidental Ingestion of Sediment | 7.1E-06 | 10% | BENZO(A)PYRENE (28%) | 4.5E-05 | 50% | ARSENIC (76%) | NA | | | 2.2E-05 | 51% | CHROMIUM (52%) |
| Dermal Contact with Sediment | 8.3E-06 | 12% | BENZO(A)PYRENE (37%) | 2.1E-05 | 23% | ARSENIC (98%) | NA | | | 6.8E-06 | 16% | ARSENIC (94%) |
| Incidental Ingestion of Surface Water | 3.2E-06 | 5% | ARSENIC (88%) | 1.1E-05 | 13% | ARSENIC (95%) | NA | | | 6.6E-06 | 15% | ARSENIC (90%) |
| Dermal Contact with Surface Water | 5.1E-05 | 73% | BENZO(A)PYRENE (51%) | 1.3E-05 | 14% | CHROMIUM (43%) | NA | | | 7.9E-06 | 18% | CHROMIUM (81%) |
| **Total Risk:** | **7E-05** | | | **9E-05** | | | **NA** | | | **4E-05** | | |
| **Adolescent Swimmer** | | | | | | | | | | | | |
| Incidental Ingestion of Sediment | 1.0E-05 | 13% | BENZO(A)PYRENE (39%) | 4.6E-05 | 59% | ARSENIC (52%) | NA | | | 3.2E-05 | 65% | CHROMIUM (75%) |
| Dermal Contact with Sediment | 9.2E-06 | 12% | BENZO(A)PYRENE (53%) | 1.2E-05 | 15% | ARSENIC (94%) | NA | | | 4.0E-06 | 8% | ARSENIC (86%) |
| Incidental Ingestion of Surface Water | 2.2E-06 | 3% | ARSENIC (71%) | 7.0E-06 | 9% | ARSENIC (87%) | NA | | | 4.4E-06 | 9% | ARSENIC (76%) |
| Dermal Contact with Surface Water | 5.8E-05 | 73% | BENZO(A)PYRENE (59%) | 1.4E-05 | 17% | CHROMIUM (49%) | NA | | | 8.5E-06 | 18% | CHROMIUM (93%) |
| **Total Risk:** | **8E-05** | | | **8E-05** | | | **NA** | | | **5E-05** | | |
| **Child Swimmer** | | | | | | | | | | | | |
| Incidental Ingestion of Sediment | 7.9E-05 | 36% | BENZO(A)PYRENE (45%) | 2.8E-04 | 79% | CHROMIUM (68%) | NA | | | 2.4E-04 | 83% | CHROMIUM (87%) |
| Dermal Contact with Sediment | 1.6E-05 | 7% | BENZO(A)PYRENE (60%) | 1.1E-05 | 3% | ARSENIC (88%) | NA | | | 4.1E-06 | 1% | ARSENIC (75%) |
| Incidental Ingestion of Surface Water | 1.3E-05 | 6% | ARSENIC (51%) | 3.4E-05 | 10% | ARSENIC (73%) | NA | | | 2.4E-05 | 8% | ARSENIC (56%) |
| Dermal Contact with Surface Water | 1.1E-04 | 50% | BENZO(A)PYRENE (61%) | 2.8E-05 | 8% | CHROMIUM (54%) | NA | | | 1.9E-05 | 7% | CHROMIUM (96%) |
| **Total Risk:** | **2E-04** | | | **3E-04** | | | **NA** | | | **3E-04** | | |
| **Adult Angler** | | | | | | | | | | | | |
| Ingestion of Fish | NA | | | NA | | | NA | | | 2.8E-04 | 100% | CHROMIUM (92%) |
| **Total Risk:** | **NA** | | | **NA** | | | **NA** | | | **3E-04** | | |
| **Adolescent Angler** | | | | | | | | | | | | |
| Ingestion of Fish | NA | | | NA | | | NA | | | 3.6E-04 | 100% | CHROMIUM (97%) |
| **Total Risk:** | **NA** | | | **NA** | | | **NA** | | | **4E-04** | | |
| **Child Angler** | | | | | | | | | | | | |
| Ingestion of Fish | NA | | | NA | | | NA | | | 8.2E-04 | 100% | CHROMIUM (99%) |
| **Total Risk:** | **NA** | | | **NA** | | | **NA** | | | **8E-04** | | |

| Receptor/Exposure Pathway | SL | | | BWL | | | HC | | | KWL | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Non-cancer Hazard | Non-cancer Hazard | Percent Contribution | Major Contributor | Non-cancer Hazard | Percent Contribution | Major Contributor | Non-cancer Hazard | Percent Contribution | Major Contributor | Non-cancer Hazard | Percent Contribution | Major Contributor |
| **Adult Recreator** | | | | | | | | | | | | |
| Incidental Ingestion of Soil | NA | | | 1.8E-01 | 46% | ARSENIC (65%) | 7.7E-01 | 60% | ARSENIC (66%) | 4.9E-02 | 35% | THALLIUM (46%) |
| Dermal Contact with Soil | NA | | | 2.5E-02 | 6% | ARSENIC (99%) | 1.1E-01 | 9% | ARSENIC (95%) | 1.9E-03 | 1% | ARSENIC (94%) |
| Inhalation of Particulates | NA | | | 1.8E-03 | <1% | CYANIDE (77%) | 1.1E-01 | 9% | CYANIDE (98%) | 9.2E-04 | <1% | CYANIDE (91%) |
| Incidental Ingestion of Sediment | 3.2E-02 | 38% | THALLIUM (40%) | 1.3E-01 | 32% | ARSENIC (68%) | 1.9E-01 | 15% | ARSENIC (61%) | 6.2E-02 | 44% | ARSENIC (43%) |
| Dermal Contact with Sediment | 1.4E-02 | 17% | BENZO(A)PYRENE (82%) | 5.5E-02 | 14% | ARSENIC (94%) | 7.3E-02 | 6% | ARSENIC (95%) | 1.9E-02 | 14% | ARSENIC (82%) |
| Dermal Contact with Surface Water | 3.8E-02 | 45% | BENZO(A)PYRENE (52%) | 7.4E-03 | 2% | BENZO(A)PYRENE (46%) | 2.6E-02 | 2% | CHROMIUM (54%) | 7.8E-03 | 6% | THALLIUM (67%) |
| **Total Hazard:** | **8E-02** | | | **4E-01** | | | **1E+00** | | | **1E-01** | | |
| **Adolescent Recreator** | | | | | | | | | | | | |
| Incidental Ingestion of Soil | NA | | | 3.3E-01 | 48% | ARSENIC (65%) | 1.4E+00 | 65% | ARSENIC (66%) | 8.9E-02 | 37% | THALLIUM (46%) |
| Dermal Contact with Soil | NA | | | 3.5E-02 | 5% | ARSENIC (99%) | 1.6E-01 | 7% | ARSENIC (95%) | 2.7E-03 | 1% | ARSENIC (94%) |
| Inhalation of Particulates | NA | | | 1.8E-03 | <1% | CYANIDE (77%) | 1.1E-01 | 5% | CYANIDE (98%) | 9.2E-04 | <1% | CYANIDE (91%) |
| Incidental Ingestion of Sediment | 5.9E-02 | 45% | THALLIUM (40%) | 2.3E-01 | 34% | ARSENIC (68%) | 3.4E-01 | 16% | ARSENIC (61%) | 1.1E-01 | 46% | ARSENIC (43%) |
| Dermal Contact with Sediment | 2.0E-02 | 15% | BENZO(A)PYRENE (82%) | 7.6E-02 | 11% | ARSENIC (94%) | 1.0E-01 | 5% | ARSENIC (95%) | 2.7E-02 | 11% | ARSENIC (82%) |
| Dermal Contact with Surface Water | 5.3E-02 | 40% | BENZO(A)PYRENE (52%) | 1.0E-02 | 2% | BENZO(A)PYRENE (46%) | 3.7E-02 | 2% | CHROMIUM (54%) | 1.1E-02 | 4% | THALLIUM (67%) |
| **Total Hazard:** | **1E-01** | | | **7E-01** | | | **2E+00** | | | **2E-01** | | |
| **Child Recreator** | | | | | | | | | | | | |
| Incidental Ingestion of Soil | NA | | | 1.9E+00 | 54% | ARSENIC (65%) | 8.2E+00 | 73% | ARSENIC (66%) | 5.2E-01 | 42% | THALLIUM (46%) |
| Dermal Contact with Soil | NA | | | 1.5E-01 | 4% | ARSENIC (99%) | 6.8E-01 | 6% | ARSENIC (95%) | 1.2E-02 | <1% | ARSENIC (94%) |
| Inhalation of Particulates | NA | | | 1.8E-03 | <1% | CYANIDE (77%) | 1.1E-01 | 1% | CYANIDE (98%) | 9.2E-04 | <1% | CYANIDE (91%) |
| Incidental Ingestion of Sediment | 3.5E-01 | 76% | THALLIUM (40%) | 1.3E+00 | 38% | ARSENIC (68%) | 2.0E+00 | 18% | ARSENIC (61%) | 6.6E-01 | 53% | ARSENIC (43%) |
| Dermal Contact with Sediment | 3.0E-02 | 7% | BENZO(A)PYRENE (82%) | 1.1E-01 | 3% | ARSENIC (94%) | 1.5E-01 | 1% | ARSENIC (95%) | 4.1E-02 | 3% | ARSENIC (82%) |
| Dermal Contact with Surface Water | 8.0E-02 | 17% | BENZO(A)PYRENE (52%) | 1.5E-02 | <1% | BENZO(A)PYRENE (46%) | 5.6E-02 | <1% | CHROMIUM (54%) | 1.6E-02 | 1% | THALLIUM (67%) |
| **Total Hazard:** | **5E-01** | | | **4E+00** | | | **1E+01** | | | **1E+00** | | |
| **Adult Swimmer** | | | | | | | | | | | | |
| Incidental Ingestion of Sediment | 7.7E-02 | 11% | THALLIUM (40%) | 3.0E-01 | 43% | ARSENIC (68%) | NA | | | 1.5E-01 | 20% | ARSENIC (43%) |
| Dermal Contact with Sediment | 3.4E-02 | 5% | BENZO(A)PYRENE (82%) | 1.3E-01 | 19% | ARSENIC (94%) | NA | | | 4.7E-02 | 6% | ARSENIC (82%) |
| Incidental Ingestion of Surface Water | 6.3E-02 | 9% | MANGANESE (40%) | 1.6E-01 | 23% | THALLIUM (49%) | NA | | | 4.2E-01 | 56% | THALLIUM (87%) |
| Dermal Contact with Surface Water | 5.0E-01 | 74% | BENZO(A)PYRENE (46%) | 1.1E-01 | 16% | BENZO(A)PYRENE (36%) | NA | | | 1.4E-01 | 18% | THALLIUM (67%) |
| **Total Hazard:** | **7E-01** | | | **7E-01** | | | **NA** | | | **8E-01** | | |
| **Adolescent Swimmer** | | | | | | | | | | | | |
| Incidental Ingestion of Sediment | 1.4E-01 | 17% | THALLIUM (40%) | 5.5E-01 | 50% | ARSENIC (68%) | NA | | | 2.7E-01 | 24% | ARSENIC (43%) |
| Dermal Contact with Sediment | 4.7E-02 | 6% | BENZO(A)PYRENE (82%) | 1.8E-01 | 17% | ARSENIC (94%) | NA | | | 6.5E-02 | 6% | ARSENIC (82%) |
| Incidental Ingestion of Surface Water | 9.0E-02 | 11% | MANGANESE (40%) | 2.3E-01 | 22% | THALLIUM (49%) | NA | | | 6.1E-01 | 56% | THALLIUM (87%) |
| Dermal Contact with Surface Water | 5.7E-01 | 67% | BENZO(A)PYRENE (47%) | 1.2E-01 | 11% | BENZO(A)PYRENE (38%) | NA | | | 1.5E-01 | 14% | THALLIUM (67%) |
| **Total Hazard:** | **8E-01** | | | **1E+00** | | | **NA** | | | **1E+00** | | |
| **Child Swimmer** | | | | | | | | | | | | |
| Incidental Ingestion of Sediment | 8.3E-01 | 33% | THALLIUM (40%) | 3.2E+00 | 61% | ARSENIC (68%) | NA | | | 1.6E+00 | 26% | ARSENIC (43%) |
| Dermal Contact with Sediment | 7.1E-02 | 3% | BENZO(A)PYRENE (82%) | 2.7E-01 | 5% | ARSENIC (94%) | NA | | | 9.8E-02 | 2% | ARSENIC (82%) |
| Incidental Ingestion of Surface Water | 6.2E-01 | 25% | MANGANESE (40%) | 1.6E+00 | 30% | THALLIUM (49%) | NA | | | 4.2E+00 | 68% | THALLIUM (87%) |
| Dermal Contact with Surface Water | 9.8E-01 | 39% | BENZO(A)PYRENE (45%) | 2.2E-01 | 4% | BENZO(A)PYRENE (34%) | NA | | | 2.9E-01 | 5% | THALLIUM (67%) |
| **Total Hazard:** | **2E+00** | | | **5E+00** | | | **NA** | | | **6E+00** | | |
| **Adult Angler** | | | | | | | | | | | | |
| Ingestion of Fish | NA | | | NA | | | NA | | | 1.9E+00 | 100% | AROCLOR-1254 (47%) |
| **Total Hazard:** | **NA** | | | **NA** | | | **NA** | | | **2E+00** | | |
| **Adolescent Angler** | | | | | | | | | | | | |
| Ingestion of Fish | NA | | | NA | | | NA | | | 2.2E+00 | 100% | AROCLOR-1254 (47%) |
| **Total Hazard:** | **NA** | | | **NA** | | | **NA** | | | **2E+00** | | |
| **Child Angler** | | | | | | | | | | | | |
| Ingestion of Fish | NA | | | NA | | | NA | | | 3.4E+00 | 100% | AROCLOR-1254 (47%) |
| **Total Hazard:** | **NA** | | | **NA** | | | **NA** | | | **3E+00** | | |

Note:

Major Contributor – COPC contributing majority of risk, by receptor & pathway (% contribution)

**Table 13**
**Risk Summary Detail by Media**

| Receptor/Exposure Media | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|
| **Cancer Risk** | **Cancer Risk** | **Percent Contribution** | **Cancer Risk** | **Percent Contribution** | **Cancer Risk** | **Percent Contribution** | **Cancer Risk** | **Percent Contribution** |
| **Adult Recreator** | | | | | | | | |
| Soil | NA | | 2.8E-05 | 49% | 1.7E-04 | 76% | 3.6E-06 | 22% |
| Sediment | 6.4E-06 | 60% | 2.8E-05 | 49% | 4.4E-05 | 20% | 1.2E-05 | 75% |
| Surface Water | 4.3E-06 | 40% | 8.3E-07 | 1% | 8.4E-06 | 4% | 4.4E-07 | 3% |
| **Total Risk:** | **1E-05** | | **6E-05** | | **2E-04** | | **2E-05** | |
| **Adolescent Recreator** | | | | | | | | |
| Soil | NA | | 2.4E-05 | 49% | 2.0E-04 | 77% | 4.9E-06 | 24% |
| Sediment | 8.2E-06 | 58% | 2.4E-05 | 49% | 4.6E-05 | 18% | 1.5E-05 | 73% |
| Surface Water | 5.9E-06 | 42% | 1.2E-06 | 2% | 1.3E-05 | 5% | 6.2E-07 | 3% |
| **Total Risk:** | **1E-05** | | **5E-05** | | **3E-04** | | **2E-05** | |
| **Child Recreator** | | | | | | | | |
| Soil | NA | | 1.2E-04 | 50% | 1.3E-03 | 82% | 3.6E-05 | 26% |
| Sediment | 4.0E-05 | 78% | 1.2E-04 | 49% | 2.8E-04 | 17% | 1.0E-04 | 73% |
| Surface Water | 1.1E-05 | 22% | 2.2E-06 | <1% | 2.5E-05 | 2% | 1.2E-06 | <1% |
| **Total Risk:** | **5E-05** | | **2E-04** | | **2E-03** | | **1E-04** | |
| **Adult Swimmer** | | | | | | | | |
| Sediment | 1.5E-05 | 22% | 6.6E-05 | 73% | NA | | 2.9E-05 | 67% |
| Surface Water | 5.4E-05 | 78% | 2.4E-05 | 27% | NA | | 1.4E-05 | 33% |
| **Total Risk:** | **7E-05** | | **9E-05** | | **NA** | | **4E-05** | |
| **Adolescent Swimmer** | | | | | | | | |
| Sediment | 2.0E-05 | 25% | 5.8E-05 | 74% | NA | | 3.6E-05 | 73% |
| Surface Water | 6.0E-05 | 75% | 2.1E-05 | 26% | NA | | 1.3E-05 | 27% |
| **Total Risk:** | **8E-05** | | **8E-05** | | **NA** | | **5E-05** | |
| **Child Swimmer** | | | | | | | | |
| Sediment | 9.5E-05 | 44% | 2.9E-04 | 82% | NA | | 2.4E-04 | 85% |
| Surface Water | 1.2E-04 | 56% | 6.1E-05 | 18% | NA | | 4.3E-05 | 15% |
| **Total Risk:** | **2E-04** | | **3E-04** | | **NA** | | **3E-04** | |

| Receptor/Exposure Media | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|
| Non-cancer Hazard | Non-cancer Hazard | Percent Contribution | Non-cancer Hazard | Percent Contribution | Non-cancer Hazard | Percent Contribution | Non-cancer Hazard | Percent Contribution |
| **Adult Recreator** | | | | | | | | |
| Soil | NA | | 2.1E-01 | 53% | 1.0E+00 | 77% | 5.2E-02 | 37% |
| Sediment | 4.7E-02 | 55% | 1.8E-01 | 46% | 2.6E-01 | 20% | 8.2E-02 | 58% |
| Surface Water | 3.8E-02 | 45% | 7.4E-03 | 2% | 2.6E-02 | 2% | 7.8E-03 | 6% |
| **Total Hazard:** | **8E-02** | | **4E-01** | | **1E+00** | | **1E-01** | |
| **Adolescent Recreator** | | | | | | | | |
| Soil | NA | | 3.7E-01 | 54% | 1.7E+00 | 78% | 9.2E-02 | 38% |
| Sediment | 7.8E-02 | 60% | 3.0E-01 | 45% | 4.4E-01 | 21% | 1.4E-01 | 57% |
| Surface Water | 5.3E-02 | 40% | 1.0E-02 | 2% | 3.7E-02 | 2% | 1.1E-02 | 4% |
| **Total Hazard:** | **1E-01** | | **7E-01** | | **2E+00** | | **2E-01** | |
| **Child Recreator** | | | | | | | | |
| Soil | NA | | 2.1E+00 | 59% | 9.0E+00 | 80% | 5.4E-01 | 43% |
| Sediment | 3.8E-01 | 83% | 1.5E+00 | 41% | 2.2E+00 | 19% | 7.0E-01 | 56% |
| Surface Water | 8.0E-02 | 17% | 1.5E-02 | <1% | 5.6E-02 | <1% | 1.6E-02 | 1% |
| **Total Hazard:** | **5E-01** | | **4E+00** | | **1E+01** | | **1E+00** | |
| **Adult Swimmer** | | | | | | | | |
| Sediment | 1.1E-01 | 16% | 4.3E-01 | 61% | NA | | 1.9E-01 | 26% |
| Surface Water | 5.7E-01 | 84% | 2.7E-01 | 39% | NA | | 5.6E-01 | 74% |
| **Total Hazard:** | **7E-01** | | **7E-01** | | **NA** | | **8E-01** | |
| **Adolescent Swimmer** | | | | | | | | |
| Sediment | 1.9E-01 | 22% | 7.3E-01 | 67% | NA | | 3.3E-01 | 30% |
| Surface Water | 6.6E-01 | 78% | 3.5E-01 | 33% | NA | | 7.6E-01 | 70% |
| **Total Hazard:** | **8E-01** | | **1E+00** | | **NA** | | **1E+00** | |
| **Child Swimmer** | | | | | | | | |
| Sediment | 9.0E-01 | 36% | 3.5E+00 | 66% | NA | | 1.7E+00 | 27% |
| Surface Water | 1.6E+00 | 64% | 1.8E+00 | 34% | NA | | 4.5E+00 | 73% |
| **Total Hazard:** | **2E+00** | | **5E+00** | | **NA** | | **6E+00** | |

Note:

NA – The medium was not evaluated in that exposure area.

**Table 14.1**

**Cancer Risk and Percentage Contribution by Medium for Each Receptor and Exposure Area**

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution |
| Adult Recreator | Soil | **Metals** | | | | | | | | |
| | | ALUMINUM | | | NA | NA | NA | NA | NA | NA |
| | | ANTIMONY | | | NA | NA | NA | NA | NA | NA |
| | | ARSENIC | | | 2.4E-05 | **86%** | 1.0E-04 | **62%** | 1.8E-06 | **49%** |
| | | BARIUM | | | | | NA | NA | | |
| | | CADMIUM | | | 6.5E-11 | <1% | 8.2E-11 | <1% | | |
| | | CHROMIUM | | | 3.9E-06 | **14%** | 6.2E-05 | **37%** | 1.8E-06 | **50%** |
| | | COBALT | | | 1.5E-10 | <1% | 8.9E-10 | <1% | 1.2E-10 | <1% |
| | | COPPER | | | | | NA | NA | | |
| | | CYANIDE | | | NA | NA | NA | NA | NA | NA |
| | | IRON | | | NA | NA | NA | NA | NA | NA |
| | | LEAD | | | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | | | | | NA | NA | | |
| | | MERCURY | | | | | NA | NA | | |
| | | NICKEL | | | | | 5.6E-11 | <1% | | |
| | | THALLIUM | | | NA | NA | NA | NA | NA | NA |
| | | VANADIUM | | | NA | NA | NA | NA | | |
| | | ZINC | | | | | NA | NA | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | | | | | 3.5E-08 | <1% | | |
| | | AROCLOR-1260 | | | | | 1.0E-07 | <1% | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | | | | | 4.8E-08 | <1% | | |
| | | BENZO(A)PYRENE | | | 4.0E-08 | <1% | 5.2E-07 | <1% | 3.8E-08 | 1% |
| | | BENZO(B)FLUORANTHENE | | | | | 6.0E-08 | <1% | 7.6E-09 | <1% |
| | | BENZO(K)FLUORANTHENE | | | | | 5.5E-09 | <1% | | |
| | | DIBENZO(A,H)ANTHRACENE | | | | | 8.7E-08 | <1% | | |
| | | INDENO(1,2,3-CD)PYRENE | | | | | 2.3E-08 | <1% | | |
| | | NAPHTHALENE | | | | | 7.8E-09 | <1% | | |
| | | **Total Risks - Soil** | **NA** | | **2.8E-05** | | **1.7E-04** | | **3.6E-06** | |
| Adult Recreator | Sediment | **Metals** | | | | | | | | |
| | | ALUMINUM | NA | NA | NA | NA | NA | NA | NA | NA |
| | | ANTIMONY | NA | NA | NA | NA | NA | NA | NA | NA |
| | | ARSENIC | 7.9E-07 | **12%** | 2.3E-05 | **83%** | 3.1E-05 | **71%** | 7.1E-06 | **58%** |
| | | BARIUM | | | | | NA | NA | | |
| | | CADMIUM | | | NA | NA | NA | NA | NA | NA |
| | | CHROMIUM | 4.5E-07 | **7%** | 4.3E-06 | **16%** | 1.2E-05 | **28%** | 4.8E-06 | **40%** |
| | | COBALT | NA | NA | NA | NA | NA | NA | NA | NA |
| | | COPPER | NA | NA | NA | NA | NA | NA | NA | NA |
| | | CYANIDE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | IRON | NA | NA | NA | NA | NA | NA | NA | NA |
| | | LEAD | NA | NA | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | NICKEL | | | | | NA | NA | NA | NA |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution |
| Adult Recreator | Sediment | THALLIUM | NA | NA | | | NA | NA | NA | NA |
| | | VANADIUM | | | NA | NA | NA | NA | NA | NA |
| | | ZINC | | | NA | NA | NA | NA | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | 2.0E-08 | <1% | 2.4E-08 | <1% | 4.1E-08 | <1% | 4.9E-08 | <1% |
| | | AROCLOR-1260 | | | | | 1.7E-08 | <1% | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | 2.8E-07 | 4% | 1.9E-08 | <1% | 1.0E-08 | <1% | 1.6E-08 | <1% |
| | | BENZO(A)PYRENE | 2.1E-06 | **33%** | 2.0E-07 | <1% | 1.0E-07 | <1% | 1.5E-07 | 1% |
| | | BENZO(B)FLUORANTHENE | 4.2E-07 | **7%** | 2.9E-08 | <1% | 1.4E-08 | <1% | 2.0E-08 | <1% |
| | | BENZO(K)FLUORANTHENE | 9.0E-09 | <1% | 2.8E-09 | <1% | | | 1.7E-09 | <1% |
| | | CHRYSENE | 4.3E-09 | <1% | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | 2.2E-07 | 3% | 4.1E-08 | <1% | 2.7E-08 | <1% | 2.3E-08 | <1% |
| | | INDENO(1,2,3-CD)PYRENE | 5.8E-08 | <1% | 1.1E-08 | <1% | 5.6E-09 | <1% | 6.0E-09 | <1% |
| | | NAPHTHALENE | | | NA | NA | | | | |
| | | **VOCs** | | | | | | | | |
| | | TRICHLOROETHYLENE (TCE) | | | 1.7E-10 | <1% | | | | |
| | | **TICs** | | | | | | | | |
| | | BENZO[J]FLUORANTHENE | 2.1E-06 | **32%** | | | | | | |
| | | **Total Risks - Sediment** | **6.4E-06** | | **2.8E-05** | | **4.4E-05** | | **1.2E-05** | |
| Adult Recreator | Surface Water | **Metals** | | | | | | | | |
| | | ALUMINUM | | | NA | NA | NA | NA | NA | NA |
| | | ANTIMONY | | | NA | NA | NA | NA | NA | NA |
| | | ARSENIC | 4.0E-08 | <1% | 1.5E-07 | **19%** | 5.5E-07 | **6%** | 8.5E-08 | **19%** |
| | | BARIUM | | | | | NA | NA | | |
| | | CADMIUM | | | NA | NA | NA | NA | | |
| | | CHROMIUM | 1.7E-07 | 4% | 3.0E-07 | **36%** | 7.9E-06 | **94%** | 3.6E-07 | **81%** |
| | | COBALT | NA | NA | NA | NA | NA | NA | NA | NA |
| | | COPPER | | | | | NA | NA | | |
| | | CYANIDE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | IRON | NA | NA | NA | NA | NA | NA | NA | NA |
| | | LEAD | | | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | MERCURY | | | | | NA | NA | | |
| | | THALLIUM | | | NA | NA | NA | NA | NA | NA |
| | | VANADIUM | | | NA | NA | NA | NA | | |
| | | ZINC | | | | | NA | NA | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | 4.9E-08 | 1% | | | | | | |
| | | BENZO(A)PYRENE | 2.2E-06 | **52%** | 3.8E-07 | **45%** | | | | |
| | | BENZO(B)FLUORANTHENE | 8.6E-08 | 2% | | | | | | |
| | | BIS(2-ETHYLHEXYL) PHTHALATE | 8.6E-07 | **20%** | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | 7.2E-07 | **17%** | | | | | | |
| | | INDENO(1,2,3-CD)PYRENE | 1.2E-07 | 3% | | | | | | |
| | | **Total Risks - Surface Water** | **4.3E-06** | | **8.3E-07** | | **8.4E-06** | | **4.4E-07** | |
| | | **Total Risks - Adult Recreator** | **1E-05** | | **6E-05** | | **2E-04** | | **2E-05** | |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution |
| Adolescent Recreator | Soil | **Metals** | | | | | | | | |
| | | ALUMINUM | | | NA | NA | NA | NA | NA | NA |
| | | ANTIMONY | | | NA | NA | NA | NA | NA | NA |
| | | ARSENIC | | | 1.6E-05 | **66%** | 6.9E-05 | **35%** | 1.2E-06 | **24%** |
| | | BARIUM | | | | | NA | NA | | |
| | | CADMIUM | | | 2.5E-11 | <1% | 3.2E-11 | <1% | | |
| | | CHROMIUM | | | 8.1E-06 | **34%** | 1.3E-04 | **65%** | 3.7E-06 | **75%** |
| | | COBALT | | | 5.9E-11 | <1% | 3.4E-10 | <1% | 4.7E-11 | <1% |
| | | COPPER | | | | | NA | NA | | |
| | | CYANIDE | | | NA | NA | NA | NA | NA | NA |
| | | IRON | | | NA | NA | NA | NA | NA | NA |
| | | LEAD | | | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | | | | | NA | NA | | |
| | | MERCURY | | | | | NA | NA | | |
| | | NICKEL | | | | | 2.2E-11 | <1% | | |
| | | THALLIUM | | | NA | NA | NA | NA | NA | NA |
| | | VANADIUM | | | NA | NA | NA | NA | | |
| | | ZINC | | | | | NA | NA | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | | | | | 2.2E-08 | <1% | | |
| | | AROCLOR-1260 | | | | | 6.5E-08 | <1% | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | | | | | 9.1E-08 | <1% | | |
| | | BENZO(A)PYRENE | | | 7.6E-08 | <1% | 9.9E-07 | <1% | 7.2E-08 | 1% |
| | | BENZO(B)FLUORANTHENE | | | | | 1.1E-07 | <1% | 1.5E-08 | <1% |
| | | BENZO(K)FLUORANTHENE | | | | | 1.0E-08 | <1% | | |
| | | DIBENZO(A,H)ANTHRACENE | | | | | 1.7E-07 | <1% | | |
| | | INDENO(1,2,3-CD)PYRENE | | | | | 4.4E-08 | <1% | | |
| | | NAPHTHALENE | | | | | 3.0E-09 | <1% | | |
| | | **Total Risks - Soil** | **NA** | | **2.4E-05** | | **2.0E-04** | | **4.9E-06** | |
| Adolescent Recreator | Sediment | **Metals** | | | | | | | | |
| | | ALUMINUM | NA | NA | NA | NA | NA | NA | NA | NA |
| | | ANTIMONY | NA | NA | NA | NA | NA | NA | NA | NA |
| | | ARSENIC | 5.0E-07 | **6%** | 1.5E-05 | **60%** | 2.0E-05 | **43%** | 4.5E-06 | **30%** |
| | | BARIUM | | | | | NA | NA | | |
| | | CADMIUM | | | NA | NA | NA | NA | NA | NA |
| | | CHROMIUM | 9.3E-07 | **11%** | 9.1E-06 | **38%** | 2.6E-05 | **56%** | 1.0E-05 | **67%** |
| | | COBALT | NA | NA | NA | NA | NA | NA | NA | NA |
| | | COPPER | NA | NA | NA | NA | NA | NA | NA | NA |
| | | CYANIDE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | IRON | NA | NA | NA | NA | NA | NA | NA | NA |
| | | LEAD | NA | NA | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | NICKEL | | | | | NA | NA | NA | NA |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution |
| Adolescent Recreator | Sediment | THALLIUM | NA | NA | | | NA | NA | NA | NA |
| | | VANADIUM | | | NA | NA | NA | NA | NA | NA |
| | | ZINC | | | NA | NA | NA | NA | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | 1.2E-08 | <1% | 1.4E-08 | <1% | 2.4E-08 | <1% | 2.9E-08 | <1% |
| | | AROCLOR-1260 | | | | | 1.0E-08 | <1% | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | 5.1E-07 | **6%** | 3.5E-08 | <1% | 1.8E-08 | <1% | 2.9E-08 | <1% |
| | | BENZO(A)PYRENE | 3.8E-06 | **46%** | 3.5E-07 | 1% | 1.8E-07 | <1% | 2.8E-07 | 2% |
| | | BENZO(B)FLUORANTHENE | 7.6E-07 | **9%** | 5.2E-08 | <1% | 2.4E-08 | <1% | 3.6E-08 | <1% |
| | | BENZO(K)FLUORANTHENE | 1.6E-08 | <1% | 5.0E-09 | <1% | | | 3.1E-09 | <1% |
| | | CHRYSENE | 7.6E-09 | <1% | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | 3.9E-07 | 5% | 7.3E-08 | <1% | 4.9E-08 | <1% | 4.2E-08 | <1% |
| | | INDENO(1,2,3-CD)PYRENE | 1.0E-07 | 1% | 1.9E-08 | <1% | 1.0E-08 | <1% | 1.1E-08 | <1% |
| | | NAPHTHALENE | | | NA | NA | | | | |
| | | **VOCs** | | | | | | | | |
| | | TRICHLOROETHYLENE (TCE) | | | 1.7E-10 | <1% | | | | |
| | | **TICs** | | | | | | | | |
| | | BENZO[J]FLUORANTHENE | 1.2E-06 | **15%** | | | | | | |
| | | **Total Risks - Sediment** | **8.2E-06** | | **2.4E-05** | | **4.6E-05** | | **1.5E-05** | |
| Adolescent Recreator | Surface Water | **Metals** | | | | | | | | |
| | | ALUMINUM | | | NA | NA | NA | NA | NA | NA |
| | | ANTIMONY | | | NA | NA | NA | NA | NA | NA |
| | | ARSENIC | 2.1E-08 | <1% | 8.3E-08 | **7%** | 2.9E-07 | 2% | 4.5E-08 | **7%** |
| | | BARIUM | | | | | NA | NA | | |
| | | CADMIUM | | | NA | NA | NA | NA | | |
| | | CHROMIUM | 2.8E-07 | 5% | 4.8E-07 | **41%** | 1.3E-05 | **98%** | 5.8E-07 | **93%** |
| | | COBALT | NA | NA | NA | NA | NA | NA | NA | NA |
| | | COPPER | | | | | NA | NA | | |
| | | CYANIDE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | IRON | NA | NA | NA | NA | NA | NA | NA | NA |
| | | LEAD | | | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | MERCURY | | | | | NA | NA | | |
| | | THALLIUM | | | NA | NA | NA | NA | NA | NA |
| | | VANADIUM | | | NA | NA | NA | NA | | |
| | | ZINC | | | | | NA | NA | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | 7.9E-08 | 1% | | | | | | |
| | | BENZO(A)PYRENE | 3.5E-06 | **60%** | 6.0E-07 | **52%** | | | | |
| | | BENZO(B)FLUORANTHENE | 1.4E-07 | 2% | | | | | | |
| | | BIS(2-ETHYLHEXYL) PHTHALATE | 4.6E-07 | **8%** | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | 1.2E-06 | **20%** | | | | | | |
| | | INDENO(1,2,3-CD)PYRENE | 1.9E-07 | 3% | | | | | | |
| | | **Total Risks - Surface Water** | **5.9E-06** | | **1.2E-06** | | **1.3E-05** | | **6.2E-07** | |
| | | **Total Risks - Adolescent Recreator** | **1E-05** | | **5E-05** | | **3E-04** | | **2E-05** | |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution |
| Child Recreator | Soil | **Metals** | | | | | | | | |
| | | ALUMINUM | | | NA | NA | NA | NA | NA | NA |
| | | ANTIMONY | | | NA | NA | NA | NA | NA | NA |
| | | ARSENIC | | | 5.4E-05 | **44%** | 2.3E-04 | **17%** | 4.0E-06 | **11%** |
| | | BARIUM | | | | | NA | NA | | |
| | | CADMIUM | | | 1.5E-11 | <1% | 1.9E-11 | <1% | | |
| | | CHROMIUM | | | 6.9E-05 | **56%** | 1.1E-03 | **82%** | 3.2E-05 | **87%** |
| | | COBALT | | | 3.6E-11 | <1% | 2.1E-10 | <1% | 2.8E-11 | <1% |
| | | COPPER | | | | | NA | NA | | |
| | | CYANIDE | | | NA | NA | NA | NA | NA | NA |
| | | IRON | | | NA | NA | NA | NA | NA | NA |
| | | LEAD | | | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | | | | | NA | NA | | |
| | | MERCURY | | | | | NA | NA | | |
| | | NICKEL | | | | | 1.3E-11 | <1% | | |
| | | THALLIUM | | | NA | NA | NA | NA | NA | NA |
| | | VANADIUM | | | NA | NA | NA | NA | | |
| | | ZINC | | | | | NA | NA | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | | | | | 6.9E-08 | <1% | | |
| | | AROCLOR-1260 | | | | | 2.1E-07 | <1% | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | | | | | 7.0E-07 | <1% | | |
| | | BENZO(A)PYRENE | | | 5.9E-07 | <1% | 7.6E-06 | <1% | 5.5E-07 | 2% |
| | | BENZO(B)FLUORANTHENE | | | | | 8.8E-07 | <1% | 1.1E-07 | <1% |
| | | BENZO(K)FLUORANTHENE | | | | | 8.1E-08 | <1% | | |
| | | DIBENZO(A,H)ANTHRACENE | | | | | 1.3E-06 | <1% | | |
| | | INDENO(1,2,3-CD)PYRENE | | | | | 3.4E-07 | <1% | | |
| | | NAPHTHALENE | | | | | 1.8E-09 | <1% | | |
| | | **Total Risks - Soil** | **NA** | | **1.2E-04** | | **1.3E-03** | | **3.6E-05** | |
| Child Recreator | Sediment | **Metals** | | | | | | | | |
| | | ALUMINUM | NA | NA | NA | NA | NA | NA | NA | NA |
| | | ANTIMONY | NA | NA | NA | NA | NA | NA | NA | NA |
| | | ARSENIC | 1.4E-06 | 3% | 3.9E-05 | **33%** | 5.3E-05 | **19%** | 1.2E-05 | **12%** |
| | | BARIUM | | | | | NA | NA | | |
| | | CADMIUM | | | NA | NA | NA | NA | NA | NA |
| | | CHROMIUM | 8.0E-06 | **20%** | 7.8E-05 | **65%** | 2.2E-04 | **80%** | 8.7E-05 | **86%** |
| | | COBALT | NA | NA | NA | NA | NA | NA | NA | NA |
| | | COPPER | NA | NA | NA | NA | NA | NA | NA | NA |
| | | CYANIDE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | IRON | NA | NA | NA | NA | NA | NA | NA | NA |
| | | LEAD | NA | NA | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | NICKEL | | | | | NA | NA | NA | NA |
| | | THALLIUM | NA | NA | | | NA | NA | NA | NA |
| | | VANADIUM | | | NA | NA | NA | NA | NA | NA |
| | | ZINC | | | NA | NA | NA | NA | | |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution |
| Child Recreator | Sediment | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | 2.4E-08 | <1% | 2.9E-08 | <1% | 5.0E-08 | <1% | 6.0E-08 | <1% |
| | | AROCLOR-1260 | | | | | 2.1E-08 | <1% | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | 2.5E-06 | **6%** | 1.7E-07 | <1% | 9.1E-08 | <1% | 1.5E-07 | <1% |
| | | BENZO(A)PYRENE | 1.9E-05 | **47%** | 1.8E-06 | 1% | 8.9E-07 | <1% | 1.4E-06 | 1% |
| | | BENZO(B)FLUORANTHENE | 3.8E-06 | **10%** | 2.6E-07 | <1% | 1.2E-07 | <1% | 1.8E-07 | <1% |
| | | BENZO(K)FLUORANTHENE | 8.0E-08 | <1% | 2.5E-08 | <1% | | | 1.5E-08 | <1% |
| | | CHRYSENE | 3.8E-08 | <1% | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | 1.9E-06 | 5% | 3.6E-07 | <1% | 2.4E-07 | <1% | 2.1E-07 | <1% |
| | | INDENO(1,2,3-CD)PYRENE | 5.2E-07 | 1% | 9.5E-08 | <1% | 5.0E-08 | <1% | 5.3E-08 | <1% |
| | | NAPHTHALENE | | | NA | NA | | | | |
| | | **VOCs** | | | | | | | | |
| | | TRICHLOROETHYLENE (TCE) | | | 9.6E-10 | <1% | | | | |
| | | **TICs** | | | | | | | | |
| | | BENZO[J]FLUORANTHENE | 2.6E-06 | **7%** | | | | | | |
| | | **Total Risks - Sediment** | **4.0E-05** | | **1.2E-04** | | **2.8E-04** | | **1.0E-04** | |
| Child Recreator | Surface Water | **Metals** | | | | | | | | |
| | | ALUMINUM | | | NA | NA | NA | NA | NA | NA |
| | | ANTIMONY | | | NA | NA | NA | NA | NA | NA |
| | | ARSENIC | 1.9E-08 | <1% | 7.5E-08 | 3% | 2.6E-07 | 1% | 4.1E-08 | 4% |
| | | BARIUM | | | | | NA | NA | | |
| | | CADMIUM | | | NA | NA | NA | NA | | |
| | | CHROMIUM | 5.4E-07 | 5% | 9.5E-07 | **43%** | 2.5E-05 | **99%** | 1.1E-06 | **96%** |
| | | COBALT | NA | NA | NA | NA | NA | NA | NA | NA |
| | | COPPER | | | | | NA | NA | | |
| | | CYANIDE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | IRON | NA | NA | NA | NA | NA | NA | NA | NA |
| | | LEAD | | | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | MERCURY | | | | | NA | NA | | |
| | | THALLIUM | | | NA | NA | NA | NA | NA | NA |
| | | VANADIUM | | | NA | NA | NA | NA | | |
| | | ZINC | | | | | NA | NA | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | 1.5E-07 | 1% | | | | | | |
| | | BENZO(A)PYRENE | 6.9E-06 | **63%** | 1.2E-06 | **54%** | | | | |
| | | BENZO(B)FLUORANTHENE | 2.7E-07 | 2% | | | | | | |
| | | BIS(2-ETHYLHEXYL) PHTHALATE | 4.2E-07 | 4% | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | 2.2E-06 | **21%** | | | | | | |
| | | INDENO(1,2,3-CD)PYRENE | 3.7E-07 | 3% | | | | | | |
| | | **Total Risks - Surface Water** | **1.1E-05** | | **2.2E-06** | | **2.5E-05** | | **1.2E-06** | |
| | | **Total Risks - Child Recreator** | **5E-05** | | **2E-04** | | **2E-03** | | **1E-04** | |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution |
| Adult Swimmer | Sediment | **Metals** | | | | | | | | |
| | | ALUMINUM | NA | NA | NA | NA | | | NA | NA |
| | | ANTIMONY | NA | NA | NA | NA | | | NA | NA |
| | | ARSENIC | 1.9E-06 | **12%** | 5.5E-05 | **83%** | | | 1.7E-05 | **58%** |
| | | CADMIUM | | | NA | NA | | | NA | NA |
| | | CHROMIUM | 1.1E-06 | **7%** | 1.0E-05 | **16%** | | | 1.2E-05 | **40%** |
| | | COBALT | NA | NA | NA | NA | | | NA | NA |
| | | COPPER | NA | NA | NA | NA | | | NA | NA |
| | | CYANIDE | NA | NA | NA | NA | | | NA | NA |
| | | IRON | NA | NA | NA | NA | | | NA | NA |
| | | LEAD | NA | NA | NA | NA | | | NA | NA |
| | | MANGANESE | NA | NA | NA | NA | | | NA | NA |
| | | NICKEL | | | | | | | NA | NA |
| | | THALLIUM | NA | NA | | | | | NA | NA |
| | | VANADIUM | | | NA | NA | | | NA | NA |
| | | ZINC | | | NA | NA | | | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | 4.7E-08 | <1% | 5.8E-08 | <1% | | | 1.2E-07 | <1% |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | 6.8E-07 | 4% | 4.6E-08 | <1% | | | 3.9E-08 | <1% |
| | | BENZO(A)PYRENE | 5.0E-06 | **33%** | 4.7E-07 | <1% | | | 3.7E-07 | 1% |
| | | BENZO(B)FLUORANTHENE | 1.0E-06 | **7%** | 6.9E-08 | <1% | | | 4.8E-08 | <1% |
| | | BENZO(K)FLUORANTHENE | 2.1E-08 | <1% | 6.7E-09 | <1% | | | 4.2E-09 | <1% |
| | | CHRYSENE | 1.0E-08 | <1% | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | 5.1E-07 | 3% | 9.8E-08 | <1% | | | 5.6E-08 | <1% |
| | | INDENO(1,2,3-CD)PYRENE | 1.4E-07 | <1% | 2.6E-08 | <1% | | | 1.4E-08 | <1% |
| | | NAPHTHALENE | | | NA | NA | | | | |
| | | **VOCs** | | | | | | | | |
| | | TRICHLOROETHYLENE (TCE) | | | 4.1E-10 | <1% | | | | |
| | | **TICs** | | | | | | | | |
| | | BENZO[J]FLUORANTHENE | 4.9E-06 | **32%** | | | | | | |
| | | **Total Risks - Sediment** | **1.5E-05** | | **6.6E-05** | | **NA** | | **2.9E-05** | |
| Adult Swimmer | Surface Water | **Metals** | | | | | | | | |
| | | ALUMINUM | | | NA | NA | | | NA | NA |
| | | ANTIMONY | | | NA | NA | | | NA | NA |
| | | ARSENIC | 3.5E-06 | **6%** | 1.4E-05 | **57%** | | | 7.4E-06 | **51%** |
| | | CADMIUM | | | NA | NA | | | | |
| | | CHROMIUM | 3.4E-06 | **6%** | 5.9E-06 | **25%** | | | 7.0E-06 | **49%** |
| | | COBALT | NA | NA | NA | NA | | | NA | NA |
| | | CYANIDE | NA | NA | NA | NA | | | NA | NA |
| | | IRON | NA | NA | NA | NA | | | NA | NA |
| | | LEAD | | | NA | NA | | | NA | NA |
| | | MANGANESE | NA | NA | NA | NA | | | NA | NA |
| | | THALLIUM | | | NA | NA | | | NA | NA |
| | | VANADIUM | | | NA | NA | | | | |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution |
| Adult Swimmer | Surface Water | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | 5.8E-07 | 1% | | | | | | |
| | | BENZO(A)PYRENE | 2.6E-05 | **48%** | 4.4E-06 | **18%** | | | | |
| | | BENZO(B)FLUORANTHENE | 1.0E-06 | 2% | | | | | | |
| | | BIS(2-ETHYLHEXYL) PHTHALATE | 1.0E-05 | **19%** | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | 8.5E-06 | **16%** | | | | | | |
| | | INDENO(1,2,3-CD)PYRENE | 1.4E-06 | 3% | | | | | | |
| | | **Total Risks - Surface Water** | **5.4E-05** | | **2.4E-05** | | **NA** | | **1.4E-05** | |
| | | **Total Risks - Adult Swimmer** | **7E-05** | | **9E-05** | | **NA** | | **4E-05** | |
| Adolescent Swimmer | Sediment | **Metals** | | | | | | | | |
| | | ALUMINUM | NA | NA | NA | NA | | | NA | NA |
| | | ANTIMONY | NA | NA | NA | NA | | | NA | NA |
| | | ARSENIC | 1.2E-06 | **6%** | 3.5E-05 | **60%** | | | 1.1E-05 | **30%** |
| | | CADMIUM | | | NA | NA | | | NA | NA |
| | | CHROMIUM | 2.2E-06 | **11%** | 2.2E-05 | **38%** | | | 2.4E-05 | **67%** |
| | | COBALT | NA | NA | NA | NA | | | NA | NA |
| | | COPPER | NA | NA | NA | NA | | | NA | NA |
| | | CYANIDE | NA | NA | NA | NA | | | NA | NA |
| | | IRON | NA | NA | NA | NA | | | NA | NA |
| | | LEAD | NA | NA | NA | NA | | | NA | NA |
| | | MANGANESE | NA | NA | NA | NA | | | NA | NA |
| | | NICKEL | | | | | | | NA | NA |
| | | THALLIUM | NA | NA | | | | | NA | NA |
| | | VANADIUM | | | NA | NA | | | NA | NA |
| | | ZINC | | | NA | NA | | | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | 2.8E-08 | <1% | 3.4E-08 | <1% | | | 7.0E-08 | <1% |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | 1.2E-06 | **6%** | 8.3E-08 | <1% | | | 7.0E-08 | <1% |
| | | BENZO(A)PYRENE | 9.0E-06 | **46%** | 8.4E-07 | 1% | | | 6.6E-07 | 2% |
| | | BENZO(B)FLUORANTHENE | 1.8E-06 | **9%** | 1.2E-07 | <1% | | | 8.5E-08 | <1% |
| | | BENZO(K)FLUORANTHENE | 3.8E-08 | <1% | 1.2E-08 | <1% | | | 7.4E-09 | <1% |
| | | CHRYSENE | 1.8E-08 | <1% | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | 9.2E-07 | 5% | 1.7E-07 | <1% | | | 1.0E-07 | <1% |
| | | INDENO(1,2,3-CD)PYRENE | 2.5E-07 | 1% | 4.6E-08 | <1% | | | 2.5E-08 | <1% |
| | | NAPHTHALENE | | | NA | NA | | | | |
| | | **VOCs** | | | | | | | | |
| | | TRICHLOROETHYLENE (TCE) | | | 4.0E-10 | <1% | | | | |
| | | **TICs** | | | | | | | | |
| | | BENZO[J]FLUORANTHENE | 2.9E-06 | **15%** | | | | | | |
| | | **Total Risks - Sediment** | **2.0E-05** | | **5.8E-05** | | **NA** | | **3.6E-05** | |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution |
| Adolescent Swimmer | Surface Water | **Metals** | | | | | | | | |
| | | ALUMINUM | | | NA | NA | | | NA | NA |
| | | ANTIMONY | | | NA | NA | | | NA | NA |
| | | ARSENIC | 1.8E-06 | 3% | 7.2E-06 | **35%** | | | 3.9E-06 | **30%** |
| | | CADMIUM | | | NA | NA | | | | |
| | | CHROMIUM | 4.3E-06 | **7%** | 7.5E-06 | **37%** | | | 9.0E-06 | **70%** |
| | | COBALT | NA | NA | NA | NA | | | NA | NA |
| | | CYANIDE | NA | NA | NA | NA | | | NA | NA |
| | | IRON | NA | NA | NA | NA | | | NA | NA |
| | | LEAD | | | NA | NA | | | NA | NA |
| | | MANGANESE | NA | NA | NA | NA | | | NA | NA |
| | | THALLIUM | | | NA | NA | | | NA | NA |
| | | VANADIUM | | | NA | NA | | | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | 7.7E-07 | 1% | | | | | | |
| | | BENZO(A)PYRENE | 3.5E-05 | **57%** | 5.9E-06 | **29%** | | | | |
| | | BENZO(B)FLUORANTHENE | 1.3E-06 | 2% | | | | | | |
| | | BIS(2-ETHYLHEXYL) PHTHALATE | 4.5E-06 | **7%** | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | 1.1E-05 | **19%** | | | | | | |
| | | INDENO(1,2,3-CD)PYRENE | 1.9E-06 | 3% | | | | | | |
| | | **Total Risks - Surface Water** | **6.0E-05** | | **2.1E-05** | | **NA** | | **1.3E-05** | |
| | | **Total Risks - Adolescent Swimmer** | **8E-05** | | **8E-05** | | **NA** | | **5E-05** | |
| Child Swimmer | Sediment | **Metals** | | | | | | | | |
| | | ALUMINUM | NA | NA | NA | NA | | | NA | NA |
| | | ANTIMONY | NA | NA | NA | NA | | | NA | NA |
| | | ARSENIC | 3.3E-06 | 3% | 9.4E-05 | **33%** | | | 2.9E-05 | **12%** |
| | | CADMIUM | | | NA | NA | | | NA | NA |
| | | CHROMIUM | 1.9E-05 | **20%** | 1.9E-04 | **65%** | | | 2.1E-04 | **86%** |
| | | COBALT | NA | NA | NA | NA | | | NA | NA |
| | | COPPER | NA | NA | NA | NA | | | NA | NA |
| | | CYANIDE | NA | NA | NA | NA | | | NA | NA |
| | | IRON | NA | NA | NA | NA | | | NA | NA |
| | | LEAD | NA | NA | NA | NA | | | NA | NA |
| | | MANGANESE | NA | NA | NA | NA | | | NA | NA |
| | | NICKEL | | | | | | | NA | NA |
| | | THALLIUM | NA | NA | | | | | NA | NA |
| | | VANADIUM | | | NA | NA | | | NA | NA |
| | | ZINC | | | NA | NA | | | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | 5.7E-08 | <1% | 7.0E-08 | <1% | | | 1.4E-07 | <1% |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution |
| Child Swimmer | Sediment | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | 6.0E-06 | **6%** | 4.1E-07 | <1% | | | 3.5E-07 | <1% |
| | | BENZO(A)PYRENE | 4.5E-05 | **47%** | 4.2E-06 | 1% | | | 3.3E-06 | 1% |
| | | BENZO(B)FLUORANTHENE | 9.0E-06 | **10%** | 6.2E-07 | <1% | | | 4.2E-07 | <1% |
| | | BENZO(K)FLUORANTHENE | 1.9E-07 | <1% | 6.0E-08 | <1% | | | 3.7E-08 | <1% |
| | | CHRYSENE | 9.1E-08 | <1% | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | 4.6E-06 | 5% | 8.7E-07 | <1% | | | 5.0E-07 | <1% |
| | | INDENO(1,2,3-CD)PYRENE | 1.2E-06 | 1% | 2.3E-07 | <1% | | | 1.3E-07 | <1% |
| | | NAPHTHALENE | | | NA | NA | | | | |
| | | **VOCs** | | | | | | | | |
| | | TRICHLOROETHYLENE (TCE) | | | 2.3E-09 | <1% | | | | |
| | | **TICs** | | | | | | | | |
| | | BENZO[J]FLUORANTHENE | 6.2E-06 | **7%** | | | | | | |
| | | **Total Risks - Sediment** | **9.5E-05** | | **2.9E-04** | | **NA** | | **2.4E-04** | |
| Child Swimmer | Surface Water | **Metals** | | | | | | | | |
| | | ALUMINUM | | | NA | NA | | | NA | NA |
| | | ANTIMONY | | | NA | NA | | | NA | NA |
| | | ARSENIC | 6.7E-06 | **5%** | 2.6E-05 | **42%** | | | 1.4E-05 | **33%** |
| | | CADMIUM | | | NA | NA | | | | |
| | | CHROMIUM | 1.4E-05 | **11%** | 2.4E-05 | **39%** | | | 2.8E-05 | **67%** |
| | | COBALT | NA | NA | NA | NA | | | NA | NA |
| | | CYANIDE | NA | NA | NA | NA | | | NA | NA |
| | | IRON | NA | NA | NA | NA | | | NA | NA |
| | | LEAD | | | NA | NA | | | NA | NA |
| | | MANGANESE | NA | NA | NA | NA | | | NA | NA |
| | | THALLIUM | | | NA | NA | | | NA | NA |
| | | VANADIUM | | | NA | NA | | | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | 1.5E-06 | 1% | | | | | | |
| | | BENZO(A)PYRENE | 6.7E-05 | **55%** | 1.1E-05 | **19%** | | | | |
| | | BENZO(B)FLUORANTHENE | 2.6E-06 | 2% | | | | | | |
| | | BIS(2-ETHYLHEXYL) PHTHALATE | 4.4E-06 | 4% | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | 2.2E-05 | **18%** | | | | | | |
| | | INDENO(1,2,3-CD)PYRENE | 3.6E-06 | 3% | | | | | | |
| | | **Total Risks - Surface Water** | **1.2E-04** | | **6.1E-05** | | **NA** | | **4.3E-05** | |
| | | **Total Risks - Child Swimmer** | **2E-04** | | **3E-04** | | **NA** | | **3E-04** | |
| Adult Angler | Tissue | **Metals** | | | | | | | | |
| | | ARSENIC | | | | | | | 1.8E-06 | <1% |
| | | CHROMIUM | | | | | | | 2.6E-04 | **92%** |
| | | LEAD | | | | | | | NA | NA |
| | | **PEST/PCB** | | | | | | | | |
| | | 4,4'-DDD | | | | | | | 3.4E-07 | <1% |
| | | 4,4'-DDE | | | | | | | 6.3E-07 | <1% |
| | | AROCLOR-1254 | | | | | | | 1.3E-05 | 5% |
| | | AROCLOR-1260 | | | | | | | 5.4E-06 | 2% |
| | | **Total Risks - Fish Tissue** | | | | | | | **2.8E-04** | |
| | | **Total Risks - Adult Angler** | | | | | | | **3E-04** | |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution | Cancer Risk | % Contribution |
| Adolescent Angler | Tissue | **Metals** | | | | | | | | |
| | | ARSENIC | | | | | | | 8.4E-07 | <1% |
| | | CHROMIUM | | | | | | | 3.5E-04 | **97%** |
| | | LEAD | | | | | | | NA | NA |
| | | **PEST/PCB** | | | | | | | | |
| | | 4,4'-DDD | | | | | | | 1.6E-07 | <1% |
| | | 4,4'-DDE | | | | | | | 2.9E-07 | <1% |
| | | AROCLOR-1254 | | | | | | | 5.9E-06 | 2% |
| | | AROCLOR-1260 | | | | | | | 2.4E-06 | <1% |
| | | **Total Risks - Fish Tissue** | | | | | | | **3.6E-04** | |
| | | **Total Risks - Adolescent Angler** | | | | | | | **4E-04** | |
| Child Angler | Tissue | **Metals** | | | | | | | | |
| | | ARSENIC | | | | | | | 7.9E-07 | <1% |
| | | CHROMIUM | | | | | | | 8.1E-04 | **99%** |
| | | LEAD | | | | | | | NA | NA |
| | | **PEST/PCB** | | | | | | | | |
| | | 4,4'-DDD | | | | | | | 1.5E-07 | <1% |
| | | 4,4'-DDE | | | | | | | 2.7E-07 | <1% |
| | | AROCLOR-1254 | | | | | | | 5.5E-06 | <1% |
| | | AROCLOR-1260 | | | | | | | 2.3E-06 | <1% |
| | | **Total Risks - Fish Tissue** | | | | | | | **8.2E-04** | |
| | | **Total Risks - Child Angler** | | | | | | | **8E-04** | |

Notes:

NA – Not Applicable.

**BOLD, Shaded – Percentage contribution for specific medium, receptor, and exposure area ≥5%.**

**Table 14.2**
**Non-cancer Hazard and Percentage Contribution by Medium for Each Receptor and Exposure Area**

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution |
| Adult Recreator | Soil | **Metals** | | | | | | | | |
| | | ALUMINUM | | | 2.0E-03 | <1% | 4.8E-03 | <1% | 2.4E-03 | 5% |
| | | ANTIMONY | | | 1.8E-03 | <1% | 6.8E-03 | <1% | 4.6E-03 | **9%** |
| | | ARSENIC | | | 1.4E-01 | **68%** | 6.2E-01 | **62%** | 1.0E-02 | **20%** |
| | | BARIUM | | | | | 5.2E-03 | <1% | | |
| | | CADMIUM | | | 1.4E-03 | <1% | 1.8E-03 | <1% | | |
| | | CHROMIUM | | | 6.9E-03 | 3% | 1.1E-01 | **11%** | 3.2E-03 | **6%** |
| | | COBALT | | | 1.9E-03 | <1% | 1.1E-02 | 1% | 1.5E-03 | 3% |
| | | COPPER | | | | | 1.8E-03 | <1% | | |
| | | CYANIDE | | | 1.9E-03 | <1% | 1.5E-01 | **15%** | 1.2E-03 | 2% |
| | | IRON | | | 4.6E-03 | 2% | 2.0E-02 | 2% | 5.8E-03 | **11%** |
| | | LEAD | | | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | | | | | 7.5E-03 | <1% | | |
| | | MERCURY | | | | | 1.3E-03 | <1% | | |
| | | NICKEL | | | | | 3.6E-04 | <1% | | |
| | | THALLIUM | | | 4.4E-02 | **21%** | 3.4E-02 | 3% | 2.3E-02 | **43%** |
| | | VANADIUM | | | 1.3E-03 | <1% | 3.1E-03 | <1% | | |
| | | ZINC | | | | | 9.1E-04 | <1% | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | | | | | 2.2E-03 | <1% | | |
| | | AROCLOR-1260 | | | | | 6.7E-03 | <1% | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | | | | | NA | NA | | |
| | | BENZO(A)PYRENE | | | 3.6E-04 | <1% | 4.7E-03 | <1% | 3.4E-04 | <1% |
| | | BENZO(B)FLUORANTHENE | | | | | NA | NA | NA | NA |
| | | BENZO(K)FLUORANTHENE | | | | | NA | NA | | |
| | | DIBENZO(A,H)ANTHRACENE | | | | | NA | NA | | |
| | | INDENO(1,2,3-CD)PYRENE | | | | | NA | NA | | |
| | | NAPHTHALENE | | | | | 2.2E-04 | <1% | | |
| | | **Total Hazards - Soil** | **NA** | | **2.1E-01** | | **1.0E+00** | | **5.2E-02** | |
| Adult Recreator | Sediment | **Metals** | | | | | | | | |
| | | ALUMINUM | 4.5E-04 | <1% | 2.2E-03 | 1% | 1.3E-03 | <1% | 2.4E-03 | 3% |
| | | ANTIMONY | 8.5E-04 | 2% | 2.7E-03 | 2% | 9.2E-04 | <1% | 7.7E-04 | <1% |
| | | ARSENIC | 4.8E-03 | **10%** | 1.4E-01 | **76%** | 1.9E-01 | **71%** | 4.3E-02 | **52%** |
| | | BARIUM | | | | | 7.6E-04 | <1% | | |
| | | CADMIUM | | | 3.0E-03 | 2% | 1.0E-03 | <1% | 1.7E-03 | 2% |
| | | CHROMIUM | 8.0E-04 | 2% | 7.8E-03 | 4% | 2.2E-02 | **8%** | 8.7E-03 | **11%** |
| | | COBALT | 3.1E-03 | **7%** | 8.4E-03 | 5% | 2.5E-03 | <1% | 4.3E-03 | **5%** |
| | | COPPER | 3.8E-04 | <1% | 6.6E-04 | <1% | 6.4E-04 | <1% | 7.9E-04 | <1% |
| | | CYANIDE | 6.7E-04 | 1% | 3.8E-03 | 2% | 1.2E-02 | 5% | 1.0E-03 | 1% |
| | | IRON | 1.7E-03 | 4% | 9.1E-03 | **5%** | 3.7E-03 | 1% | 5.7E-03 | **7%** |
| | | LEAD | NA | NA | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | 6.9E-04 | 1% | 6.9E-04 | <1% | 5.1E-04 | <1% | 8.9E-04 | 1% |
| | | NICKEL | | | | | 2.5E-04 | <1% | 2.8E-04 | <1% |
| | | THALLIUM | 1.3E-02 | **28%** | | | 2.5E-02 | **9%** | 7.0E-03 | **9%** |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution |
| Adult Recreator | Sediment | VANADIUM | | | 1.7E-03 | <1% | 7.3E-04 | <1% | 7.9E-04 | <1% |
| | | ZINC | | | 5.6E-04 | <1% | 2.4E-04 | <1% | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | 1.3E-03 | 3% | 1.6E-03 | <1% | 2.7E-03 | 1% | 3.3E-03 | 4% |
| | | AROCLOR-1260 | | | | | 1.2E-03 | <1% | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | BENZO(A)PYRENE | 1.9E-02 | **41%** | 1.8E-03 | <1% | 9.0E-04 | <1% | 1.4E-03 | 2% |
| | | BENZO(B)FLUORANTHENE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | BENZO(K)FLUORANTHENE | NA | NA | NA | NA | | | NA | NA |
| | | CHRYSENE | NA | NA | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | INDENO(1,2,3-CD)PYRENE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | NAPHTHALENE | | | 5.5E-05 | <1% | | | | |
| | | **VOCs** | | | | | | | | |
| | | TRICHLOROETHYLENE (TCE) | | | 2.0E-05 | <1% | | | | |
| | | **TICs** | | | | | | | | |
| | | BENZO[J]FLUORANTHENE | NA | NA | | | | | | |
| **Total Hazards - Sediment** | | | **4.7E-02** | | **1.8E-01** | | **2.6E-01** | | **8.2E-02** | |
| Adult Recreator | Surface Water | **Metals** | | | | | | | | |
| | | ALUMINUM | | | 1.2E-05 | <1% | 5.6E-05 | <1% | 1.2E-05 | <1% |
| | | ANTIMONY | | | 1.7E-04 | 2% | 5.1E-04 | 2% | 5.6E-04 | **7%** |
| | | ARSENIC | 2.4E-04 | <1% | 9.3E-04 | **13%** | 3.3E-03 | **12%** | 5.1E-04 | **6%** |
| | | BARIUM | | | | | 2.9E-04 | 1% | | |
| | | CADMIUM | | | 2.3E-04 | 3% | 9.1E-04 | 3% | | |
| | | CHROMIUM | 3.1E-04 | <1% | 5.4E-04 | **7%** | 1.4E-02 | **54%** | 6.5E-04 | **8%** |
| | | COBALT | 2.6E-05 | <1% | 1.2E-05 | <1% | 3.3E-05 | <1% | 1.9E-05 | <1% |
| | | COPPER | | | | | 6.4E-06 | <1% | | |
| | | CYANIDE | 6.7E-05 | <1% | 3.0E-05 | <1% | 1.3E-04 | <1% | 2.7E-05 | <1% |
| | | IRON | 1.5E-04 | <1% | 8.4E-05 | 1% | 1.8E-04 | <1% | 4.7E-05 | <1% |
| | | LEAD | | | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | 9.0E-03 | **24%** | 6.6E-04 | **9%** | 1.5E-03 | **6%** | 7.5E-04 | **10%** |
| | | MERCURY | | | | | 8.7E-05 | <1% | | |
| | | THALLIUM | | | 1.1E-03 | **15%** | 4.9E-03 | **19%** | 5.3E-03 | **67%** |
| | | VANADIUM | | | 1.7E-04 | 2% | 3.6E-04 | 1% | | |
| | | ZINC | | | | | 8.7E-06 | <1% | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | NA | NA | | | | | | |
| | | BENZO(A)PYRENE | 2.0E-02 | **52%** | 3.4E-03 | **46%** | | | | |
| | | BENZO(B)FLUORANTHENE | NA | NA | | | | | | |
| | | BIS(2-ETHYLHEXYL) PHTHALATE | 8.3E-03 | **22%** | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | NA | NA | | | | | | |
| | | INDENO(1,2,3-CD)PYRENE | NA | NA | | | | | | |
| **Total Hazards - Surface Water** | | | **3.8E-02** | | **7.4E-03** | | **2.6E-02** | | **7.8E-03** | |
| **Total Hazards - Adult Recreator** | | | **8E-02** | | **4E-01** | | **1E+00** | | **1E-01** | |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution |
| Adolescent Recreator | Soil | **Metals** | | | | | | | | |
| | | ALUMINUM | | | 3.6E-03 | <1% | 8.6E-03 | <1% | 4.3E-03 | 5% |
| | | ANTIMONY | | | 3.3E-03 | <1% | 1.2E-02 | <1% | 8.4E-03 | **9%** |
| | | ARSENIC | | | 2.5E-01 | **68%** | 1.1E+00 | **65%** | 1.8E-02 | **20%** |
| | | BARIUM | | | | | 9.2E-03 | <1% | | |
| | | CADMIUM | | | 2.4E-03 | <1% | 3.1E-03 | <1% | | |
| | | CHROMIUM | | | 1.2E-02 | 3% | 2.0E-01 | **12%** | 5.7E-03 | **6%** |
| | | COBALT | | | 3.4E-03 | <1% | 2.0E-02 | 1% | 2.7E-03 | 3% |
| | | COPPER | | | | | 3.3E-03 | <1% | | |
| | | CYANIDE | | | 2.3E-03 | <1% | 1.9E-01 | **11%** | 1.4E-03 | 2% |
| | | IRON | | | 8.3E-03 | 2% | 3.7E-02 | 2% | 1.0E-02 | **11%** |
| | | LEAD | | | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | | | | | 1.3E-02 | <1% | | |
| | | MERCURY | | | | | 2.4E-03 | <1% | | |
| | | NICKEL | | | | | 6.4E-04 | <1% | | |
| | | THALLIUM | | | 7.9E-02 | **22%** | 6.1E-02 | 4% | 4.1E-02 | **44%** |
| | | VANADIUM | | | 2.3E-03 | <1% | 5.7E-03 | <1% | | |
| | | ZINC | | | | | 1.6E-03 | <1% | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | | | | | 3.7E-03 | <1% | | |
| | | AROCLOR-1260 | | | | | 1.1E-02 | <1% | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | | | | | NA | NA | | |
| | | BENZO(A)PYRENE | | | 6.0E-04 | <1% | 7.8E-03 | <1% | 5.6E-04 | <1% |
| | | BENZO(B)FLUORANTHENE | | | | | NA | NA | NA | NA |
| | | BENZO(K)FLUORANTHENE | | | | | NA | NA | | |
| | | DIBENZO(A,H)ANTHRACENE | | | | | NA | NA | | |
| | | INDENO(1,2,3-CD)PYRENE | | | | | NA | NA | | |
| | | NAPHTHALENE | | | | | 2.2E-04 | <1% | | |
| | | **Total Hazards - Soil** | **NA** | | **3.7E-01** | | **1.7E+00** | | **9.2E-02** | |
| Adolescent Recreator | Sediment | **Metals** | | | | | | | | |
| | | ALUMINUM | 8.1E-04 | 1% | 4.0E-03 | 1% | 2.3E-03 | <1% | 4.4E-03 | 3% |
| | | ANTIMONY | 1.5E-03 | 2% | 4.9E-03 | 2% | 1.7E-03 | <1% | 1.4E-03 | <1% |
| | | ARSENIC | 7.8E-03 | **10%** | 2.3E-01 | **74%** | 3.1E-01 | **69%** | 7.0E-02 | **50%** |
| | | BARIUM | | | | | 1.4E-03 | <1% | | |
| | | CADMIUM | | | 5.0E-03 | 2% | 1.7E-03 | <1% | 2.9E-03 | 2% |
| | | CHROMIUM | 1.5E-03 | 2% | 1.4E-02 | 5% | 4.0E-02 | **9%** | 1.6E-02 | **11%** |
| | | COBALT | 5.6E-03 | **7%** | 1.5E-02 | 5% | 4.5E-03 | 1% | 7.8E-03 | **6%** |
| | | COPPER | 6.9E-04 | <1% | 1.2E-03 | <1% | 1.2E-03 | <1% | 1.4E-03 | 1% |
| | | CYANIDE | 1.2E-03 | 2% | 6.9E-03 | 2% | 2.2E-02 | 5% | 1.9E-03 | 1% |
| | | IRON | 3.1E-03 | 4% | 1.6E-02 | **5%** | 6.7E-03 | 1% | 1.0E-02 | **7%** |
| | | LEAD | NA | NA | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | 1.2E-03 | 2% | 1.2E-03 | <1% | 9.2E-04 | <1% | 1.6E-03 | 1% |
| | | NICKEL | | | | | 4.5E-04 | <1% | 5.0E-04 | <1% |
| | | THALLIUM | 2.3E-02 | **30%** | | | 4.5E-02 | **10%** | 1.3E-02 | **9%** |
| | | VANADIUM | | | 3.0E-03 | 1% | 1.3E-03 | <1% | 1.4E-03 | 1% |
| | | ZINC | | | 1.0E-03 | <1% | 4.4E-04 | <1% | | |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution |
| Adolescent Recreator | Sediment | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | 2.0E-03 | 3% | 2.5E-03 | <1% | 4.2E-03 | <1% | 5.1E-03 | 4% |
| | | AROCLOR-1260 | | | | | 1.8E-03 | <1% | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | BENZO(A)PYRENE | 2.9E-02 | **37%** | 2.7E-03 | <1% | 1.4E-03 | <1% | 2.1E-03 | 2% |
| | | BENZO(B)FLUORANTHENE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | BENZO(K)FLUORANTHENE | NA | NA | NA | NA | | | NA | NA |
| | | CHRYSENE | NA | NA | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | INDENO(1,2,3-CD)PYRENE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | NAPHTHALENE | | | 8.5E-05 | <1% | | | | |
| | | **VOCs** | | | | | | | | |
| | | TRICHLOROETHYLENE (TCE) | | | 3.6E-05 | <1% | | | | |
| | | **TICs** | | | | | | | | |
| | | BENZO[J]FLUORANTHENE | NA | NA | | | | | | |
| | | **Total Hazards - Sediment** | **7.8E-02** | | **3.0E-01** | | **4.4E-01** | | **1.4E-01** | |
| Adolescent Recreator | Surface Water | **Metals** | | | | | | | | |
| | | ALUMINUM | | | 1.6E-05 | <1% | 7.8E-05 | <1% | 1.7E-05 | <1% |
| | | ANTIMONY | | | 2.4E-04 | 2% | 7.0E-04 | 2% | 7.8E-04 | **7%** |
| | | ARSENIC | 3.3E-04 | <1% | 1.3E-03 | **13%** | 4.5E-03 | **12%** | 7.0E-04 | **6%** |
| | | BARIUM | | | | | 4.1E-04 | 1% | | |
| | | CADMIUM | | | 3.1E-04 | 3% | 1.3E-03 | 3% | | |
| | | CHROMIUM | 4.3E-04 | <1% | 7.5E-04 | **7%** | 2.0E-02 | **54%** | 9.0E-04 | **8%** |
| | | COBALT | 3.6E-05 | <1% | 1.7E-05 | <1% | 4.6E-05 | <1% | 2.7E-05 | <1% |
| | | COPPER | | | | | 8.9E-06 | <1% | | |
| | | CYANIDE | 9.3E-05 | <1% | 4.2E-05 | <1% | 1.8E-04 | <1% | 3.8E-05 | <1% |
| | | IRON | 2.0E-04 | <1% | 1.2E-04 | 1% | 2.5E-04 | <1% | 6.5E-05 | <1% |
| | | LEAD | | | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | 1.2E-02 | **24%** | 9.2E-04 | **9%** | 2.1E-03 | **6%** | 1.0E-03 | **10%** |
| | | MERCURY | | | | | 1.2E-04 | <1% | | |
| | | THALLIUM | | | 1.6E-03 | **15%** | 6.8E-03 | **19%** | 7.3E-03 | **67%** |
| | | VANADIUM | | | 2.4E-04 | 2% | 5.0E-04 | 1% | | |
| | | ZINC | | | | | 1.2E-05 | <1% | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | NA | NA | | | | | | |
| | | BENZO(A)PYRENE | 2.8E-02 | **52%** | 4.7E-03 | **46%** | | | | |
| | | BENZO(B)FLUORANTHENE | NA | NA | | | | | | |
| | | BIS(2-ETHYLHEXYL) PHTHALATE | 1.1E-02 | **22%** | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | NA | NA | | | | | | |
| | | INDENO(1,2,3-CD)PYRENE | NA | NA | | | | | | |
| | | **Total Hazards - Surface Water** | **5.3E-02** | | **1.0E-02** | | **3.7E-02** | | **1.1E-02** | |
| | | **Total Hazards - Adolescent Recreator** | **1E-01** | | **7E-01** | | **2E+00** | | **2E-01** | |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution |
| Child Recreator | Soil | **Metals** | | | | | | | | |
| | | ALUMINUM | | | 2.1E-02 | <1% | 5.0E-02 | <1% | 2.5E-02 | 5% |
| | | ANTIMONY | | | 1.9E-02 | <1% | 7.3E-02 | <1% | 5.0E-02 | **9%** |
| | | ARSENIC | | | 1.4E+00 | **67%** | 6.1E+00 | **68%** | 1.0E-01 | **19%** |
| | | BARIUM | | | | | 5.3E-02 | <1% | | |
| | | CADMIUM | | | 1.4E-02 | <1% | 1.7E-02 | <1% | | |
| | | CHROMIUM | | | 7.4E-02 | 4% | 1.2E+00 | **13%** | 3.4E-02 | **6%** |
| | | COBALT | | | 2.0E-02 | <1% | 1.2E-01 | 1% | 1.6E-02 | 3% |
| | | COPPER | | | | | 2.0E-02 | <1% | | |
| | | CYANIDE | | | 6.8E-03 | <1% | 5.6E-01 | **6%** | 4.2E-03 | <1% |
| | | IRON | | | 4.9E-02 | 2% | 2.2E-01 | 2% | 6.1E-02 | **11%** |
| | | LEAD | | | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | | | | | 7.8E-02 | <1% | | |
| | | MERCURY | | | | | 1.4E-02 | <1% | | |
| | | NICKEL | | | | | 3.8E-03 | <1% | | |
| | | THALLIUM | | | 4.7E-01 | **22%** | 3.6E-01 | 4% | 2.4E-01 | **45%** |
| | | VANADIUM | | | 1.4E-02 | <1% | 3.3E-02 | <1% | | |
| | | ZINC | | | | | 9.7E-03 | <1% | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | | | | | 2.0E-02 | <1% | | |
| | | AROCLOR-1260 | | | | | 6.0E-02 | <1% | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | | | | | NA | NA | | |
| | | BENZO(A)PYRENE | | | 3.2E-03 | <1% | 4.2E-02 | <1% | 3.0E-03 | <1% |
| | | BENZO(B)FLUORANTHENE | | | | | NA | NA | NA | NA |
| | | BENZO(K)FLUORANTHENE | | | | | NA | NA | | |
| | | DIBENZO(A,H)ANTHRACENE | | | | | NA | NA | | |
| | | INDENO(1,2,3-CD)PYRENE | | | | | NA | NA | | |
| | | NAPHTHALENE | | | | | 3.0E-04 | <1% | | |
| | | **Total Hazards - Soil** | **NA** | | **2.1E+00** | | **9.0E+00** | | **5.4E-01** | |
| Child Recreator | Sediment | **Metals** | | | | | | | | |
| | | ALUMINUM | 4.8E-03 | 1% | 2.4E-02 | 2% | 1.3E-02 | <1% | 2.6E-02 | 4% |
| | | ANTIMONY | 9.1E-03 | 2% | 2.9E-02 | 2% | 9.9E-03 | <1% | 8.2E-03 | 1% |
| | | ARSENIC | 3.5E-02 | **9%** | 1.0E+00 | **70%** | 1.4E+00 | **64%** | 3.2E-01 | **45%** |
| | | BARIUM | | | | | 8.1E-03 | <1% | | |
| | | CADMIUM | | | 2.3E-02 | 2% | 8.0E-03 | <1% | 1.4E-02 | 2% |
| | | CHROMIUM | 8.6E-03 | 2% | 8.3E-02 | **6%** | 2.4E-01 | **11%** | 9.2E-02 | **13%** |
| | | COBALT | 3.3E-02 | **9%** | 9.0E-02 | **6%** | 2.7E-02 | 1% | 4.6E-02 | **7%** |
| | | COPPER | 4.1E-03 | 1% | 7.1E-03 | <1% | 6.8E-03 | <1% | 8.4E-03 | 1% |
| | | CYANIDE | 7.2E-03 | 2% | 4.1E-02 | 3% | 1.3E-01 | **6%** | 1.1E-02 | 2% |
| | | IRON | 1.8E-02 | 5% | 9.7E-02 | **7%** | 3.9E-02 | 2% | 6.1E-02 | **9%** |
| | | LEAD | NA | NA | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | 7.3E-03 | 2% | 7.3E-03 | <1% | 5.5E-03 | <1% | 9.5E-03 | 1% |
| | | NICKEL | | | | | 2.7E-03 | <1% | 2.9E-03 | <1% |
| | | THALLIUM | 1.4E-01 | **37%** | | | 2.6E-01 | **12%** | 7.5E-02 | **11%** |
| | | VANADIUM | | | 1.8E-02 | 1% | 7.8E-03 | <1% | 8.4E-03 | 1% |
| | | ZINC | | | 6.0E-03 | <1% | 2.6E-03 | <1% | | |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution |
| Child Recreator | Sediment | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | 7.0E-03 | 2% | 8.6E-03 | <1% | 1.4E-02 | <1% | 1.8E-02 | 2% |
| | | AROCLOR-1260 | | | | | 6.2E-03 | <1% | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | BENZO(A)PYRENE | 1.0E-01 | **27%** | 9.6E-03 | <1% | 4.9E-03 | <1% | 7.5E-03 | 1% |
| | | BENZO(B)FLUORANTHENE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | BENZO(K)FLUORANTHENE | NA | NA | NA | NA | | | NA | NA |
| | | CHRYSENE | NA | NA | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | INDENO(1,2,3-CD)PYRENE | NA | NA | NA | NA | NA | NA | NA | NA |
| | | NAPHTHALENE | | | 3.0E-04 | <1% | | | | |
| | | **VOCs** | | | | | | | | |
| | | TRICHLOROETHYLENE (TCE) | | | 2.1E-04 | <1% | | | | |
| | | **TICs** | | | | | | | | |
| | | BENZO[J]FLUORANTHENE | NA | NA | | | | | | |
| | | **Total Hazards - Sediment** | **3.8E-01** | | **1.5E+00** | | **2.2E+00** | | **7.0E-01** | |
| Child Recreator | Surface Water | **Metals** | | | | | | | | |
| | | ALUMINUM | | | 2.5E-05 | <1% | 1.2E-04 | <1% | 2.6E-05 | <1% |
| | | ANTIMONY | | | 3.7E-04 | 2% | 1.1E-03 | 2% | 1.2E-03 | **7%** |
| | | ARSENIC | 5.0E-04 | <1% | 1.9E-03 | **13%** | 6.9E-03 | **12%** | 1.1E-03 | **6%** |
| | | BARIUM | | | | | 6.2E-04 | 1% | | |
| | | CADMIUM | | | 4.7E-04 | 3% | 1.9E-03 | 3% | | |
| | | CHROMIUM | 6.5E-04 | <1% | 1.1E-03 | **7%** | 3.0E-02 | **54%** | 1.4E-03 | **8%** |
| | | COBALT | 5.4E-05 | <1% | 2.6E-05 | <1% | 6.9E-05 | <1% | 4.1E-05 | <1% |
| | | COPPER | | | | | 1.3E-05 | <1% | | |
| | | CYANIDE | 1.4E-04 | <1% | 6.4E-05 | <1% | 2.7E-04 | <1% | 5.7E-05 | <1% |
| | | IRON | 3.1E-04 | <1% | 1.8E-04 | 1% | 3.7E-04 | <1% | 9.8E-05 | <1% |
| | | LEAD | | | NA | NA | NA | NA | NA | NA |
| | | MANGANESE | 1.9E-02 | **24%** | 1.4E-03 | **9%** | 3.2E-03 | **6%** | 1.6E-03 | **10%** |
| | | MERCURY | | | | | 1.8E-04 | <1% | | |
| | | THALLIUM | | | 2.4E-03 | **15%** | 1.0E-02 | **19%** | 1.1E-02 | **67%** |
| | | VANADIUM | | | 3.6E-04 | 2% | 7.5E-04 | 1% | | |
| | | ZINC | | | | | 1.8E-05 | <1% | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | NA | NA | | | | | | |
| | | BENZO(A)PYRENE | 4.2E-02 | **52%** | 7.1E-03 | **46%** | | | | |
| | | BENZO(B)FLUORANTHENE | NA | NA | | | | | | |
| | | BIS(2-ETHYLHEXYL) PHTHALATE | 1.7E-02 | **22%** | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | NA | NA | | | | | | |
| | | INDENO(1,2,3-CD)PYRENE | NA | NA | | | | | | |
| | | **Total Hazards - Surface Water** | **8.0E-02** | | **1.5E-02** | | **5.6E-02** | | **1.6E-02** | |
| | | **Total Hazards - Child Recreator** | **5E-01** | | **4E+00** | | **1E+01** | | **1E+00** | |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution |
| Adult Swimmer | Sediment | **Metals** | | | | | | | | |
| | | ALUMINUM | 1.1E-03 | <1% | 5.3E-03 | 1% | | | 5.8E-03 | 3% |
| | | ANTIMONY | 2.0E-03 | 2% | 6.5E-03 | 2% | | | 1.8E-03 | <1% |
| | | ARSENIC | 1.1E-02 | **10%** | 3.3E-01 | **76%** | | | 1.0E-01 | **52%** |
| | | CADMIUM | | | 7.1E-03 | 2% | | | 4.1E-03 | 2% |
| | | CHROMIUM | 1.9E-03 | 2% | 1.9E-02 | 4% | | | 2.1E-02 | **11%** |
| | | COBALT | 7.4E-03 | **7%** | 2.0E-02 | 5% | | | 1.0E-02 | **5%** |
| | | COPPER | 9.1E-04 | <1% | 1.6E-03 | <1% | | | 1.9E-03 | <1% |
| | | CYANIDE | 1.6E-03 | 1% | 9.1E-03 | 2% | | | 2.4E-03 | 1% |
| | | IRON | 4.1E-03 | 4% | 2.2E-02 | **5%** | | | 1.4E-02 | **7%** |
| | | LEAD | NA | NA | NA | NA | | | NA | NA |
| | | MANGANESE | 1.6E-03 | 1% | 1.6E-03 | <1% | | | 2.1E-03 | 1% |
| | | NICKEL | | | | | | | 6.6E-04 | <1% |
| | | THALLIUM | 3.1E-02 | **28%** | | | | | 1.7E-02 | **9%** |
| | | VANADIUM | | | 4.0E-03 | <1% | | | 1.9E-03 | <1% |
| | | ZINC | | | 1.3E-03 | <1% | | | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | 3.1E-03 | 3% | 3.9E-03 | <1% | | | 7.9E-03 | 4% |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | NA | NA | NA | NA | | | NA | NA |
| | | BENZO(A)PYRENE | 4.5E-02 | **41%** | 4.2E-03 | <1% | | | 3.3E-03 | 2% |
| | | BENZO(B)FLUORANTHENE | NA | NA | NA | NA | | | NA | NA |
| | | BENZO(K)FLUORANTHENE | NA | NA | NA | NA | | | NA | NA |
| | | CHRYSENE | NA | NA | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | NA | NA | NA | NA | | | NA | NA |
| | | INDENO(1,2,3-CD)PYRENE | NA | NA | NA | NA | | | NA | NA |
| | | NAPHTHALENE | | | 1.3E-04 | <1% | | | | |
| | | **VOCs** | | | | | | | | |
| | | TRICHLOROETHYLENE (TCE) | | | 4.8E-05 | <1% | | | | |
| | | **TICs** | | | | | | | | |
| | | BENZO[J]FLUORANTHENE | NA | NA | | | | | | |
| | | **Total Hazards - Sediment** | **1.1E-01** | | **4.3E-01** | | **NA** | | **1.9E-01** | |
| Adult Swimmer | Surface Water | **Metals** | | | | | | | | |
| | | ALUMINUM | | | 1.0E-03 | <1% | | | 1.1E-03 | <1% |
| | | ANTIMONY | | | 4.9E-03 | 2% | | | 1.6E-02 | 3% |
| | | ARSENIC | 2.1E-02 | 4% | 8.2E-02 | **30%** | | | 4.4E-02 | **8%** |
| | | CADMIUM | | | 4.8E-03 | 2% | | | | |
| | | CHROMIUM | 6.0E-03 | 1% | 1.1E-02 | 4% | | | 1.3E-02 | 2% |
| | | COBALT | 5.0E-03 | <1% | 2.4E-03 | <1% | | | 3.7E-03 | <1% |
| | | CYANIDE | 5.9E-03 | 1% | 2.7E-03 | <1% | | | 2.4E-03 | <1% |
| | | IRON | 1.3E-02 | 2% | 7.4E-03 | 3% | | | 4.1E-03 | <1% |
| | | LEAD | | | NA | NA | | | NA | NA |
| | | MANGANESE | 1.8E-01 | **33%** | 1.4E-02 | **5%** | | | 1.5E-02 | 3% |
| | | THALLIUM | | | 9.9E-02 | **37%** | | | 4.6E-01 | **82%** |
| | | VANADIUM | | | 3.4E-03 | 1% | | | | |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution |
| Adult Swimmer | Surface Water | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | NA | NA | | | | | | |
| | | BENZO(A)PYRENE | 2.3E-01 | **41%** | 4.0E-02 | **15%** | | | | |
| | | BENZO(B)FLUORANTHENE | NA | NA | | | | | | |
| | | BIS(2-ETHYLHEXYL) PHTHALATE | 9.7E-02 | **17%** | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | NA | NA | | | | | | |
| | | INDENO(1,2,3-CD)PYRENE | NA | NA | | | | | | |
| | | **Total Hazards - Surface Water** | **5.7E-01** | | **2.7E-01** | | **NA** | | **5.6E-01** | |
| | | **Total Hazards - Adult Swimmer** | **7E-01** | | **7E-01** | | **NA** | | **8E-01** | |
| Adolescent Swimmer | Sediment | **Metals** | | | | | | | | |
| | | ALUMINUM | 1.9E-03 | 1% | 9.5E-03 | 1% | | | 1.0E-02 | 3% |
| | | ANTIMONY | 3.7E-03 | 2% | 1.2E-02 | 2% | | | 3.3E-03 | <1% |
| | | ARSENIC | 1.9E-02 | **10%** | 5.4E-01 | **74%** | | | 1.7E-01 | **50%** |
| | | CADMIUM | | | 1.2E-02 | 2% | | | 6.9E-03 | 2% |
| | | CHROMIUM | 3.5E-03 | 2% | 3.4E-02 | 5% | | | 3.7E-02 | **11%** |
| | | COBALT | 1.3E-02 | **7%** | 3.6E-02 | 5% | | | 1.9E-02 | **6%** |
| | | COPPER | 1.6E-03 | <1% | 2.9E-03 | <1% | | | 3.4E-03 | 1% |
| | | CYANIDE | 2.9E-03 | 2% | 1.6E-02 | 2% | | | 4.4E-03 | 1% |
| | | IRON | 7.4E-03 | 4% | 3.9E-02 | **5%** | | | 2.5E-02 | **7%** |
| | | LEAD | NA | NA | NA | NA | | | NA | NA |
| | | MANGANESE | 3.0E-03 | 2% | 3.0E-03 | <1% | | | 3.8E-03 | 1% |
| | | NICKEL | | | | | | | 1.2E-03 | <1% |
| | | THALLIUM | 5.6E-02 | **30%** | | | | | 3.0E-02 | **9%** |
| | | VANADIUM | | | 7.3E-03 | 1% | | | 3.4E-03 | 1% |
| | | ZINC | | | 2.4E-03 | <1% | | | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | 4.9E-03 | 3% | 6.0E-03 | <1% | | | 1.2E-02 | 4% |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | NA | NA | NA | NA | | | NA | NA |
| | | BENZO(A)PYRENE | 7.0E-02 | **37%** | 6.5E-03 | <1% | | | 5.1E-03 | 2% |
| | | BENZO(B)FLUORANTHENE | NA | NA | NA | NA | | | NA | NA |
| | | BENZO(K)FLUORANTHENE | NA | NA | NA | NA | | | NA | NA |
| | | CHRYSENE | NA | NA | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | NA | NA | NA | NA | | | NA | NA |
| | | INDENO(1,2,3-CD)PYRENE | NA | NA | NA | NA | | | NA | NA |
| | | NAPHTHALENE | | | 2.0E-04 | <1% | | | | |
| | | **VOCs** | | | | | | | | |
| | | TRICHLOROETHYLENE (TCE) | | | 8.7E-05 | <1% | | | | |
| | | **TICs** | | | | | | | | |
| | | BENZO[J]FLUORANTHENE | NA | NA | | | | | | |
| | | **Total Hazards - Sediment** | **1.9E-01** | | **7.3E-01** | | **NA** | | **3.3E-01** | |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution |
| Adolescent Swimmer | Surface Water | **Metals** | | | | | | | | |
| | | ALUMINUM | | | 1.4E-03 | <1% | | | 1.5E-03 | <1% |
| | | ANTIMONY | | | 6.0E-03 | 2% | | | 1.9E-02 | 3% |
| | | ARSENIC | 2.9E-02 | 4% | 1.1E-01 | **32%** | | | 6.1E-02 | **8%** |
| | | CADMIUM | | | 5.5E-03 | 2% | | | | |
| | | CHROMIUM | 6.7E-03 | 1% | 1.2E-02 | 3% | | | 1.4E-02 | 2% |
| | | COBALT | 7.1E-03 | 1% | 3.3E-03 | <1% | | | 5.3E-03 | <1% |
| | | CYANIDE | 8.1E-03 | 1% | 3.7E-03 | 1% | | | 3.3E-03 | <1% |
| | | IRON | 1.8E-02 | 3% | 1.0E-02 | 3% | | | 5.6E-03 | <1% |
| | | LEAD | | | NA | NA | | | NA | NA |
| | | MANGANESE | 2.1E-01 | **32%** | 1.5E-02 | 4% | | | 1.7E-02 | 2% |
| | | THALLIUM | | | 1.4E-01 | **38%** | | | 6.4E-01 | **83%** |
| | | VANADIUM | | | 3.7E-03 | 1% | | | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | NA | NA | | | | | | |
| | | BENZO(A)PYRENE | 2.7E-01 | **41%** | 4.6E-02 | **13%** | | | | |
| | | BENZO(B)FLUORANTHENE | NA | NA | | | | | | |
| | | BIS(2-ETHYLHEXYL) PHTHALATE | 1.1E-01 | **17%** | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | NA | NA | | | | | | |
| | | INDENO(1,2,3-CD)PYRENE | NA | NA | | | | | | |
| | | **Total Hazards - Surface Water** | **6.6E-01** | | **3.5E-01** | | **NA** | | **7.6E-01** | |
| | | **Total Hazards - Adolescent Swimmer** | **8E-01** | | **1E+00** | | **NA** | | **1E+00** | |
| Child Swimmer | Sediment | **Metals** | | | | | | | | |
| | | ALUMINUM | 1.1E-02 | 1% | 5.6E-02 | 2% | | | 6.2E-02 | 4% |
| | | ANTIMONY | 2.2E-02 | 2% | 7.0E-02 | 2% | | | 2.0E-02 | 1% |
| | | ARSENIC | 8.4E-02 | **9%** | 2.4E+00 | **70%** | | | 7.6E-01 | **45%** |
| | | CADMIUM | | | 5.6E-02 | 2% | | | 3.2E-02 | 2% |
| | | CHROMIUM | 2.0E-02 | 2% | 2.0E-01 | **6%** | | | 2.2E-01 | **13%** |
| | | COBALT | 7.9E-02 | **9%** | 2.1E-01 | **6%** | | | 1.1E-01 | **7%** |
| | | COPPER | 9.7E-03 | 1% | 1.7E-02 | <1% | | | 2.0E-02 | 1% |
| | | CYANIDE | 1.7E-02 | 2% | 9.7E-02 | 3% | | | 2.6E-02 | 2% |
| | | IRON | 4.4E-02 | 5% | 2.3E-01 | **7%** | | | 1.5E-01 | **9%** |
| | | LEAD | NA | NA | NA | NA | | | NA | NA |
| | | MANGANESE | 1.7E-02 | 2% | 1.8E-02 | <1% | | | 2.3E-02 | 1% |
| | | NICKEL | | | | | | | 7.0E-03 | <1% |
| | | THALLIUM | 3.3E-01 | **37%** | | | | | 1.8E-01 | **11%** |
| | | VANADIUM | | | 4.3E-02 | 1% | | | 2.0E-02 | 1% |
| | | ZINC | | | 1.4E-02 | <1% | | | | |
| | | **PEST/PCB** | | | | | | | | |
| | | AROCLOR-1254 | 1.7E-02 | 2% | 2.0E-02 | <1% | | | 4.2E-02 | 2% |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | NA | NA | NA | NA | | | NA | NA |
| | | BENZO(A)PYRENE | 2.5E-01 | **27%** | 2.3E-02 | <1% | | | 1.8E-02 | 1% |
| | | BENZO(B)FLUORANTHENE | NA | NA | NA | NA | | | NA | NA |
| | | BENZO(K)FLUORANTHENE | NA | NA | NA | NA | | | NA | NA |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution |
| Child Swimmer | Sediment | CHRYSENE | NA | NA | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | NA | NA | NA | NA | | | NA | NA |
| | | INDENO(1,2,3-CD)PYRENE | NA | NA | NA | NA | | | NA | NA |
| | | NAPHTHALENE | | | 7.1E-04 | <1% | | | | |
| | | **VOCs** | | | | | | | | |
| | | TRICHLOROETHYLENE (TCE) | | | 5.1E-04 | <1% | | | | |
| | | **TICs** | | | | | | | | |
| | | BENZO[J]FLUORANTHENE | NA | NA | | | | | | |
| | | **Total Hazards - Sediment** | **9.0E-01** | | **3.5E+00** | | **NA** | | **1.7E+00** | |
| Child Swimmer | Surface Water | **Metals** | | | | | | | | |
| | | ALUMINUM | | | 8.5E-03 | <1% | | | 9.1E-03 | <1% |
| | | ANTIMONY | | | 2.5E-02 | 1% | | | 7.9E-02 | 2% |
| | | ARSENIC | 1.7E-01 | **11%** | 6.8E-01 | **37%** | | | 3.7E-01 | **8%** |
| | | CADMIUM | | | 1.6E-02 | <1% | | | | |
| | | CHROMIUM | 1.7E-02 | 1% | 2.9E-02 | 2% | | | 3.5E-02 | <1% |
| | | COBALT | 4.6E-02 | 3% | 2.2E-02 | 1% | | | 3.4E-02 | <1% |
| | | CYANIDE | 4.9E-02 | 3% | 2.2E-02 | 1% | | | 2.0E-02 | <1% |
| | | IRON | 1.1E-01 | **7%** | 6.2E-02 | 3% | | | 3.4E-02 | <1% |
| | | LEAD | | | NA | NA | | | NA | NA |
| | | MANGANESE | 5.8E-01 | **36%** | 4.3E-02 | 2% | | | 4.9E-02 | 1% |
| | | THALLIUM | | | 8.2E-01 | **45%** | | | 3.8E+00 | **86%** |
| | | VANADIUM | | | 9.4E-03 | <1% | | | | |
| | | **SVOCs** | | | | | | | | |
| | | BENZO(A)ANTHRACENE | NA | NA | | | | | | |
| | | BENZO(A)PYRENE | 4.5E-01 | **28%** | 7.6E-02 | 4% | | | | |
| | | BENZO(B)FLUORANTHENE | NA | NA | | | | | | |
| | | BIS(2-ETHYLHEXYL) PHTHALATE | 1.8E-01 | **12%** | | | | | | |
| | | DIBENZO(A,H)ANTHRACENE | NA | NA | | | | | | |
| | | INDENO(1,2,3-CD)PYRENE | NA | NA | | | | | | |
| | | **Total Hazards - Surface Water** | **1.6E+00** | | **1.8E+00** | | **NA** | | **4.5E+00** | |
| | | **Total Hazards - Child Swimmer** | **2E+00** | | **5E+00** | | **NA** | | **6E+00** | |
| Adult Angler | Tissue | **Metals** | | | | | | | | |
| | | ARSENIC | | | | | | | 1.1E-02 | <1% |
| | | CHROMIUM | | | | | | | 4.7E-01 | **25%** |
| | | LEAD | | | | | | | NA | NA |
| | | **PEST/PCB** | | | | | | | | |
| | | 4,4'-DDD | | | | | | | 1.3E-01 | **7%** |
| | | 4,4'-DDE | | | | | | | 1.7E-02 | <1% |
| | | AROCLOR-1254 | | | | | | | 8.7E-01 | **47%** |
| | | AROCLOR-1260 | | | | | | | 3.6E-01 | **20%** |
| | | **Total Risks - Fish Tissue** | | | | | | | **1.9E+00** | |
| | | **Total Risks - Adult Angler** | | | | | | | **2E+00** | |

| Receptor | Exposure Medium | Chemical of Potential Concern | SL | | BWL | | HC | | KWL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution | Non-cancer Hazard | % Contribution |
| Adolescent Angler | Tissue | **Metals** | | | | | | | | |
| | | ARSENIC | | | | | | | 1.3E-02 | <1% |
| | | CHROMIUM | | | | | | | 5.5E-01 | **25%** |
| | | LEAD | | | | | | | NA | NA |
| | | **PEST/PCB** | | | | | | | | |
| | | 4,4'-DDD | | | | | | | 1.5E-01 | **7%** |
| | | 4,4'-DDE | | | | | | | 2.0E-02 | <1% |
| | | AROCLOR-1254 | | | | | | | 1.0E+00 | **47%** |
| | | AROCLOR-1260 | | | | | | | 4.3E-01 | **20%** |
| | | **Total Risks - Fish Tissue** | | | | | | | **2.2E+00** | |
| | | **Total Risks - Adolescent Angler** | | | | | | | **2E+00** | |
| Child Angler | Tissue | **Metals** | | | | | | | | |
| | | ARSENIC | | | | | | | 2.0E-02 | <1% |
| | | CHROMIUM | | | | | | | 8.6E-01 | **25%** |
| | | LEAD | | | | | | | NA | NA |
| | | **PEST/PCB** | | | | | | | | |
| | | 4,4'-DDD | | | | | | | 2.4E-01 | **7%** |
| | | 4,4'-DDE | | | | | | | 3.1E-02 | <1% |
| | | AROCLOR-1254 | | | | | | | 1.6E+00 | **47%** |
| | | AROCLOR-1260 | | | | | | | 6.7E-01 | **20%** |
| | | **Total Risks - Fish Tissue** | | | | | | | **3.4E+00** | |
| | | **Total Risks - Child Angler** | | | | | | | **3E+00** | |

Notes:

NA – Not Applicable.

**BOLD, Shaded – Percentage contribution for specific medium, receptor, and exposure area ≥5%.**

# Appendix D

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## Screening for Tentatively Identified Compounds

**Table 1 Waterbodies TIC Summary (All Areas)**

| Group | Analyte | Soil 0-2 ft | | | | Sediment 0-0.5 ft | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SVOC | (TIC) (-)-.BETA.-ELEMENE | 1 | 356 | 0.91 | 0.91 | | | | | | | | |
| SVOC | (TIC) (-)-.BETA.-PINENE | 2 | 356 | 0.97 | 2.7 | | | | | | | | |
| SVOC | (TIC) (+)-CYCLOISOATIVENE | 4 | 356 | 0.084 | 1.8 | | | | | | | | |
| SVOC | (TIC) (+)-EPI-BICYCLOSESQUIPHELLANDRENE | 1 | 356 | 0.47 | 0.47 | | | | | | | | |
| SVOC | (TIC) (3.BETA.,5.BETA.)-CHOLESTAN- | 1 | 356 | 38 | 38 | | | | | | | | |
| SVOC | (TIC) (5.BETA.)-CHLOESTAN-3-ONE | 1 | 356 | 2.1 | 2.1 | | | | | | | | |
| SVOC | (TIC) (5.BETA.)-CHOLESTAN-3-ONE | 3 | 356 | 2.4 | 57 | | | | | | | | |
| SVOC | (TIC) (E)-5-EICOSENE | 1 | 356 | 1.1 | 1.1 | | | | | | | | |
| SVOC | (TIC) (E)-9-EICOSENE | 1 | 356 | 1.4 | 1.4 | | | | | | | | |
| SVOC | (TIC) (Z)-13-DOCOSENAMIDE | 1 | 356 | 0.97 | 0.97 | | | | | | | | |
| SVOC | (TIC) (Z)14-TRICOSENYL FORMATE | | | | | 3 | 355 | 0.23 | 1.4 | | | | |
| SVOC | (TIC) (Z,Z)-9,12-OCTADECADIENOIC A | 1 | 356 | 0.17 | 0.17 | | | | | | | | |
| SVOC | (TIC) .ALPHA.-AMYRIN | | | | | 13 | 355 | 3.8 | 18 | | | | |
| SVOC | (TIC) .ALPHA.-COPAENE | 3 | 356 | 0.9 | 3.4 | | | | | | | | |
| SVOC | (TIC) .ALPHA.-CUBEBENE | 2 | 356 | 0.27 | 2.2 | | | | | | | | |
| SVOC | (TIC) .ALPHA.-FENCHENE | 1 | 356 | 0.23 | 0.23 | | | | | | | | |
| SVOC | (TIC) .ALPHA.-HUMULENE | 1 | 356 | 2.9 | 2.9 | | | | | | | | |
| SVOC | (TIC) .ALPHA.-METHYLSTYRENE | | | | | 1 | 355 | 0.99 | 0.99 | | | | |
| SVOC | (TIC) .ALPHA.-MUUROLENE | 2 | 356 | 0.15 | 9.5 | | | | | | | | |
| SVOC | (TIC) .ALPHA.-MUUROLENE-(-) | 1 | 356 | 0.48 | 0.48 | | | | | | | | |
| SVOC | (TIC) .ALPHA.-PINENE | | | | | 5 | 355 | 0.12 | 2.6 | | | | |
| SVOC | (TIC) .ALPHA.-PINENE,(-)- | 13 | 356 | 0.082 | 5.7 | | | | | | | | |
| SVOC | (TIC) .BETA. SITOSTEROL | 2 | 356 | 0.58 | 1.3 | | | | | | | | |
| SVOC | (TIC) .BETA.-AMYRIN | 1 | 356 | 3.1 | 3.1 | 12 | 355 | 0.99 | 28 | | | | |
| SVOC | (TIC) .BETA.-AMYRIN TRIMETHYLSILYL ETHER | | | | | 1 | 355 | 0.55 | 0.55 | | | | |
| SVOC | (TIC) .BETA.-CUBEBENE | 6 | 356 | 0.096 | 4.8 | | | | | | | | |
| SVOC | (TIC) .BETA.-HUMULENE | 1 | 356 | 0.7 | 0.7 | | | | | | | | |
| SVOC | (TIC) .BETA.-MAALIENE | 1 | 356 | 0.083 | 0.083 | | | | | | | | |
| SVOC | (TIC) .BETA.-PHELLANDRENE | | | | | 1 | 355 | 29 | 29 | | | | |
| SVOC | (TIC) .BETA.-PINENE | 1 | 356 | 2.5 | 2.5 | | | | | | | | |
| SVOC | (TIC) .BETA.-SELINENE | 1 | 356 | 0.35 | 0.35 | | | | | | | | |
| SVOC | (TIC) .BETA.SITOSTEROL | 3 | 356 | 0.73 | 1.6 | | | | | | | | |
| SVOC | (TIC) .BETA.-SITOSTEROL | 12 | 356 | 0.13 | 33 | 8 | 355 | 1.2 | 17 | 3 | 33 | 0.0039 | 0.0044 |
| SVOC | (TIC) .DELTA.3-CARENE | 2 | 356 | 0.69 | 0.75 | | | | | | | | |
| SVOC | (TIC) .DELTA.-CADINENE | 4 | 356 | 0.1 | 13 | | | | | | | | |
| SVOC | (TIC) .DELTA.-CADINOL | 1 | 356 | 0.42 | 0.42 | | | | | | | | |
| SVOC | (TIC) .GAMMA.-CADINENE | 1 | 356 | 1.5 | 1.5 | | | | | | | | |
| SVOC | (TIC) .GAMMA.-ERGOSTENOL | | | | | 1 | 355 | 4 | 4 | | | | |
| SVOC | (TIC) .GAMMA.SITOSTEROL | 3 | 356 | 1.2 | 5 | | | | | | | | |
| SVOC | (TIC) .GAMMA.-SITOSTEROL | 44 | 356 | 0.31 | 36 | 219 | 355 | 0.34 | 89 | | | | |
| SVOC | (TIC) .GAMMA.-TOCOPHEROL | 1 | 356 | 1.7 | 1.7 | | | | | | | | |
| SVOC | (TIC) [2.2]PARACYCLOPHANE | | | | | 3 | 355 | 2.8 | 4.3 | | | | |

**Table 1 Waterbodies TIC Summary (All Areas)**

| Group | Analyte | Soil 0-2 ft | | | | Sediment 0-0.5 ft | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SVOC | (TIC) [3,4:9,10]DIBENZPYRENE | | | | | 1 | 355 | 0.85 | 0.85 | | | | |
| SVOC | (TIC) 1,1,2,1-TERPHENYL | | | | | 1 | 355 | 1.8 | 1.8 | | | | |
| SVOC | (TIC) 1,1,3,1,3,1-QUATERPHENYL | | | | | 1 | 355 | 2.8 | 2.8 | | | | |
| SVOC | (TIC) 1,1:2,1:3,1-QUATERPHENYL | | | | | 1 | 355 | 0.95 | 0.95 | | | | |
| SVOC | (TIC) 1,1:2,1:4,1-QUATERPHENYL | | | | | 2 | 355 | 0.53 | 1.8 | | | | |
| SVOC | (TIC) 1,1:2,1-TERPHENYL, 4-PHENYL- | | | | | 1 | 355 | 7.1 | 7.1 | | | | |
| SVOC | (TIC) 1,1:3,1-TERPHENYL, 5-PHENYL- | | | | | 1 | 355 | 4.6 | 4.6 | | | | |
| SVOC | (TIC) 1,13-TETRADECADIENE | | | | | 1 | 355 | 1.4 | 1.4 | | | | |
| SVOC | (TIC) 1,19-EICOSADIENE | 1 | 356 | 3.2 | 3.2 | | | | | | | | |
| SVOC | (TIC) 1,1-BIPHENYL-2-AZIDO | 1 | 356 | 1 | 1 | | | | | | | | |
| SVOC | (TIC) 1,2,4-METHENO-1H-INDENE,OCTAHYDRO-1,7A- | 1 | 356 | 0.51 | 0.51 | | | | | | | | |
| SVOC | (TIC) 1,2,4-TRIMETHYLBENZENE | | | | | 3 | 355 | 0.4 | 1.2 | | | | |
| SVOC | (TIC) 1,2:4,5-DIBENZOPYRENE | | | | | 1 | 355 | 1.6 | 1.6 | | | | |
| SVOC | (TIC) 1,2:7,8-DIBENZOPHENANTHRENE | 1 | 356 | 0.44 | 0.44 | | | | | | | | |
| SVOC | (TIC) 1,22-DOCOSANEDIOL | 1 | 356 | 3.5 | 3.5 | | | | | | | | |
| SVOC | (TIC) 1,2-BENZENEDICARBOXYLIC A | | | | | 1 | 355 | 4.8 | 4.8 | | | | |
| SVOC | (TIC) 1,2-BENZENEDICARBOXYLIC ACID, 3-NITRO- | | | | | 4 | 355 | 0.13 | 3.1 | | | | |
| SVOC | (TIC) 1,2-BENZENEDICARBOXYLIC ACID, BIS(2-METH | | | | | 3 | 355 | 0.6 | 11 | | | | |
| SVOC | (TIC) 1,2-BENZENEDICARBOXYLIC ACID, BUTYL 8-ME | | | | | 1 | 355 | 0.14 | 0.14 | | | | |
| SVOC | (TIC) 1,2-BENZENEDICARBOXYLIC ACID, BUTYL CYCL | | | | | 1 | 355 | 0.42 | 0.42 | | | | |
| SVOC | (TIC) 1,2-BENZENEDICARBOXYLIC ACID, DIISOOCTYL | | | | | 1 | 355 | 3.9 | 3.9 | | | | |
| SVOC | (TIC) 1,2-BENZENEDICARBOXYLIC ACID, MONO(2-ETH | | | | | 1 | 355 | 0.1 | 0.1 | | | | |
| SVOC | (TIC) 1,2-CYCLOHEXANEDIOL, TRANS- | | | | | | | | | 1 | 33 | 0.0033 | 0.0033 |
| SVOC | (TIC) 1,2-DICHLOROBENZENE-D4 | | | | | 1 | 355 | 1.6 | 1.6 | | | | |
| SVOC | (TIC) 1,2-DODECANEDIOL | | | | | 1 | 355 | 0.44 | 0.44 | | | | |
| SVOC | (TIC) 1,2-TETRADECANEDIOL | | | | | 1 | 355 | 0.13 | 0.13 | | | | |
| SVOC | (TIC) 1,3-BENZODIOXOLE, 5-(1-PROPENYL)- | 2 | 356 | 0.55 | 5.7 | | | | | | | | |
| SVOC | (TIC) 1,3-BENZODIOXOLE, 5-(1-PROPENYL)-,(Z)- | 1 | 356 | 0.9 | 0.9 | | | | | | | | |
| SVOC | (TIC) 1,3-BENZODIOXOLE,5-(1-PROPENYL)-,(Z)- | 1 | 356 | 0.099 | 0.099 | | | | | | | | |
| SVOC | (TIC) 1,3-BENZODIOXOLE,5-(2-PROPENYL)- | 24 | 356 | 0.093 | 18 | | | | | | | | |
| SVOC | (TIC) 1,3-BIS(TRIMETHYLSILOXY)BENZENE | | | | | 1 | 355 | 3.1 | 3.1 | | | | |
| SVOC | (TIC) 1,4-DICHLOROBENZENE-D4 | | | | | 1 | 355 | 3.5 | 3.5 | | | | |
| SVOC | (TIC) 1,4-METHANONAPHTHALENE, 1 | | | | | 1 | 355 | 8.3 | 8.3 | | | | |
| SVOC | (TIC) 1,4-NAPHTHALENEDIONE,5-HYDROXY- | 4 | 356 | 0.11 | 1.4 | | | | | | | | |
| SVOC | (TIC) 1,4-NAPHTHOQUINONE, 2-ACETYL-3,8-DIHYDRO | | | | | 1 | 355 | 0.95 | 0.95 | | | | |
| SVOC | (TIC) 1,6,10-DODECATRIENE, 7,11 | | | | | 5 | 355 | 0.5 | 14 | | | | |
| SVOC | (TIC) 1,6-CYCLODECADIENE,1-METHYL-5-METHYLENE | 1 | 356 | 0.087 | 0.087 | | | | | | | | |
| SVOC | (TIC) 1,8-NAPHTHALIC ANHYDRIDE | | | | | 1 | 355 | 0.9 | 0.9 | | | | |
| SVOC | (TIC) 10,18-BISNORABIETA-5,7,9(10),11,13-PENTA | | | | | 7 | 355 | 0.14 | 3.3 | | | | |
| SVOC | (TIC) 10,18-BISNORABIETA-8,11,13-TRIENE | | | | | 3 | 355 | 0.63 | 2.7 | | | | |
| SVOC | (TIC) 10-METHYLNONADECANE | | | | | 1 | 355 | 0.52 | 0.52 | | | | |
| SVOC | (TIC) 10-NONADECANOL | | | | | 1 | 355 | 1.5 | 1.5 | | | | |

**Table 1 Waterbodies TIC Summary (All Areas)**

| Group | Analyte | Soil 0-2 ft | | | | Sediment 0-0.5 ft | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SVOC | (TIC) 11H-BENZO[A]CARBAZOLE | | | | | 1 | 355 | 8.3 | 8.3 | | | | |
| SVOC | (TIC) 11H-BENZO[A]FLUOREN-11-ONE | | | | | 5 | 355 | 0.15 | 12 | | | | |
| SVOC | (TIC) 11H-BENZO[A]FLUORENE | | | | | 30 | 355 | 0.091 | 16 | | | | |
| SVOC | (TIC) 11H-BENZO[B]FLUORENE | | | | | 33 | 355 | 0.14 | 23 | | | | |
| SVOC | (TIC) 11H-BENZOCARBAZOLEISOMER | | | | | 1 | 355 | 3.2 | 3.2 | | | | |
| SVOC | (TIC) 11H-INDENO[2,1-A]PHENANTHRENE | | | | | 1 | 355 | 2.4 | 2.4 | | | | |
| SVOC | (TIC) 11-TRICOSENE | | | | | 1 | 355 | 8.7 | 8.7 | | | | |
| SVOC | (TIC) 13-DOCOSENAMIDE, (Z)- | | | | | 10 | 355 | 0.24 | 1.8 | | | | |
| SVOC | (TIC) 13-TETRADECEN-1-OL ACETATE | 3 | 356 | 0.77 | 1.5 | 1 | 355 | 0.57 | 0.57 | | | | |
| SVOC | (TIC) 14-OCTADECENAL | 1 | 356 | 0.53 | 0.53 | 2 | 355 | 0.1 | 2.6 | | | | |
| SVOC | (TIC) 16-OCTADECENAL | | | | | 4 | 355 | 0.38 | 0.82 | | | | |
| SVOC | (TIC) 17-(1,5-DIMETHYLHEXYL)-10,13-DIMETHYL-4- | | | | | 2 | 355 | 0.46 | 0.66 | | | | |
| SVOC | (TIC) 17-NORKAUR-15-ENE, 13-METHYL-, (8.BETA., | | | | | 1 | 355 | 2.2 | 2.2 | | | | |
| SVOC | (TIC) 17-OCTADECENAL | 1 | 356 | 1 | 1 | 1 | 355 | 1.8 | 1.8 | | | | |
| SVOC | (TIC) 17-PENTATRIACONTENE | 4 | 356 | 0.28 | 3.7 | 10 | 355 | 0.2 | 22 | | | | |
| SVOC | (TIC) 17-PENTATRICONTENE | 1 | 356 | 1.5 | 1.5 | | | | | | | | |
| SVOC | (TIC) 18-NORABIETANE | 2 | 356 | 0.66 | 2.3 | 12 | 355 | 0.17 | 3.5 | | | | |
| SVOC | (TIC) 1-BUTENE, 2-ETHYL-3-METHYL- | | | | | 1 | 355 | 2 | 2 | | | | |
| SVOC | (TIC) 1-DECENE | | | | | 2 | 355 | 0.13 | 1.2 | | | | |
| SVOC | (TIC) 1-DOCOSANOL | | | | | 3 | 355 | 1.1 | 12 | | | | |
| SVOC | (TIC) 1-DOCOSENE | 20 | 356 | 0.089 | 4.8 | 30 | 355 | 0.39 | 12 | | | | |
| SVOC | (TIC) 1-DODECANOL | | | | | 10 | 355 | 0.12 | 4.2 | | | | |
| SVOC | (TIC) 1-DODECANOL, 3,7,11-TRIMETHYL- | | | | | 1 | 355 | 0.81 | 0.81 | | | | |
| SVOC | (TIC) 1-DODECENE | | | | | 1 | 355 | 0.29 | 0.29 | | | | |
| SVOC | (TIC) 1-DOTRIACONTANOL | | | | | 3 | 355 | 0.49 | 4.9 | | | | |
| SVOC | (TIC) 1-EICOSANOL | 4 | 356 | 0.36 | 3.7 | 11 | 355 | 0.14 | 10 | | | | |
| SVOC | (TIC) 1-EICOSENE | 1 | 356 | 0.94 | 0.94 | | | | | | | | |
| SVOC | (TIC) 1-EICOSYNE | | | | | 2 | 355 | 0.94 | 11 | | | | |
| SVOC | (TIC) 1H-CYCLOPENTA[1,3]CYCLOPROPA[1,2]BENZENE | 4 | 356 | 0.17 | 0.82 | | | | | | | | |
| SVOC | (TIC) 1H-CYCLOPROP[E]AZULEN-7-O | | | | | 1 | 355 | 5.6 | 5.6 | | | | |
| SVOC | (TIC) 1H-CYCLOPROP[E]AZULENE, 1 | | | | | 1 | 355 | 5.6 | 5.6 | | | | |
| SVOC | (TIC) 1H-CYCLOPROP[E]AZULENE, 1A,2,3,4,4A,5,6, | | | | | 2 | 355 | 0.92 | 3.1 | | | | |
| SVOC | (TIC) 1H-CYCLOPROP[E]AZULENE, 1A,2,3,5,6,7,7A, | | | | | 2 | 355 | 0.55 | 4.9 | | | | |
| SVOC | (TIC) 1-HEPTADECENE | 1 | 356 | 1.1 | 1.1 | 2 | 355 | 3.2 | 5.3 | | | | |
| SVOC | (TIC) 1-HEXACOSANAL | | | | | 4 | 355 | 0.41 | 2.6 | | | | |
| SVOC | (TIC) 1-HEXACOSANOL | | | | | 1 | 355 | 5.8 | 5.8 | | | | |
| SVOC | (TIC) 1-HEXACOSENE | 1 | 356 | 0.57 | 0.57 | 3 | 355 | 1.9 | 2.5 | | | | |
| SVOC | (TIC) 1-HEXADECANOL | 2 | 356 | 0.4 | 1.4 | 4 | 355 | 0.48 | 6.4 | | | | |
| SVOC | (TIC) 1H-INDENE, 2-PHENYL- | | | | | 1 | 355 | 0.46 | 0.46 | | | | |
| SVOC | (TIC) 1H-INDENE, OCTAHYDRO-2,3A,4-TRIMETHYL-2- | | | | | 1 | 355 | 1.9 | 1.9 | | | | |
| SVOC | (TIC) 1-IODO-2-METHYLUNDECANE | | | | | 1 | 355 | 0.79 | 0.79 | | | | |
| SVOC | (TIC) 1-METHYL-4-(1-METHYLETHYL)-CYCLOHEXANE | | | | | 1 | 355 | 0.9 | 0.9 | | | | |

**Table 1 Waterbodies TIC Summary (All Areas)**

| Group | Analyte | Soil 0-2 ft | | | | Sediment 0-0.5 ft | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SVOC | (TIC) 1-METHYLPHENANTHRENE | 1 | 356 | 0.31 | 0.31 | | | | | | | | |
| SVOC | (TIC) 1-NAPHTHALENEPROPANOL, .A | | | | | 1 | 355 | 7.5 | 7.5 | | | | |
| SVOC | (TIC) 1-NAPHTHALENEPROPANOL, .ALPHA.-ETHENYLDE | | | | | 1 | 355 | 9.4 | 9.4 | | | | |
| SVOC | (TIC) 1-N-HEXYLADAMANTANE | | | | | 1 | 355 | 0.74 | 0.74 | | | | |
| SVOC | (TIC) 1-NONADECANOL | | | | | 3 | 355 | 0.43 | 4.8 | | | | |
| SVOC | (TIC) 1-NONADECENE | 5 | 356 | 0.26 | 3.8 | 1 | 355 | 1.9 | 1.9 | | | | |
| SVOC | (TIC) 1-OCTADECANOL | | | | | 1 | 355 | 0.2 | 0.2 | | | | |
| SVOC | (TIC) 1-OCTADECENE | 1 | 356 | 0.96 | 0.96 | 19 | 355 | 0.52 | 9.3 | | | | |
| SVOC | (TIC) 1-PENTADECANOL | | | | | 2 | 355 | 2.2 | 3.2 | | | | |
| SVOC | (TIC) 1-PENTADECENE | | | | | 3 | 355 | 0.7 | 9.8 | | | | |
| SVOC | (TIC) 1-PENTENE, 2,3-DIMETHYL- | | | | | 3 | 355 | 1 | 2.2 | | | | |
| SVOC | (TIC) 1-PENTENE, 3,3-DIMETHYL- | | | | | 3 | 355 | 0.75 | 3 | | | | |
| SVOC | (TIC) 1-PHENANTHRENECARBOXYLIC | | | | | 1 | 355 | 130 | 130 | | | | |
| SVOC | (TIC) 1-PHENANTHRENECARBOXYLIC ACID, 1,2,3,4,4 | | | | | 3 | 355 | 0.61 | 21 | | | | |
| SVOC | (TIC) 1-PHENANTHRENECARBOXYLIC ACID, 7-ETHENYL | | | | | 1 | 355 | 8 | 8 | | | | |
| SVOC | (TIC) 1-PHENANTHRENECARBOXYLIC ACID, 7-ETHYL-1 | | | | | 1 | 355 | 3.4 | 3.4 | | | | |
| SVOC | (TIC) 1-PHENANTHRENECARBOXYLICACID,1,2,3,4,4 | 1 | 356 | 0.5 | 0.5 | | | | | | | | |
| SVOC | (TIC) 1-PROPENE,3,3,3-TRICHLORO- | | | | | | | | | 1 | 33 | 0.0025 | 0.0025 |
| SVOC | (TIC) 1R-.ALPHA.-PINENE | 5 | 356 | 0.16 | 3.1 | 1 | 355 | 0.43 | 0.43 | | | | |
| SVOC | (TIC) 1R-ALPHA-PINENE | 2 | 356 | 0.39 | 1.6 | | | | | | | | |
| SVOC | (TIC) 1-TETRADECANOL | | | | | 2 | 355 | 0.16 | 0.61 | | | | |
| SVOC | (TIC) 1-TRICOSENE | 1 | 356 | 0.31 | 0.31 | | | | | | | | |
| SVOC | (TIC) 1-TRIDECANOL | | | | | 3 | 355 | 0.17 | 0.35 | | | | |
| SVOC | (TIC) 1-UNDECANOL | | | | | 3 | 355 | 0.34 | 0.9 | | | | |
| SVOC | (TIC) 2(1H)NAPHTHALENONE, 3,5,6,7,8,8A-HEXAHYD | | | | | 4 | 355 | 0.14 | 2.5 | | | | |
| SVOC | (TIC) 2(1H)-NAPHTHALENONE, OCTAHYDRO-4A-METHYL | | | | | 1 | 355 | 0.3 | 0.3 | | | | |
| SVOC | (TIC) 2(1H)-PHENANTHRENONE, 3,4,4A,4B,5,6,7,8, | | | | | 2 | 355 | 0.63 | 7 | | | | |
| SVOC | (TIC) 2(3H)-BENZOTHIAZOLONE | | | | | 1 | 355 | 0.3 | 0.3 | | | | |
| SVOC | (TIC) 2-(4A,8-DIMETHYL-6-OXO-1,2,3,4,4A,5,6,8A | | | | | 1 | 355 | 1.3 | 1.3 | | | | |
| SVOC | (TIC) 2,10-DODECADIEN-1-OL, 3,7,11-TRIMETHYL-, | | | | | 1 | 355 | 0.77 | 0.77 | | | | |
| SVOC | (TIC) 2,2,4A,6A,8A,9,12B,14A-OCTAMETHYL-1,2,3, | | | | | 4 | 355 | 0.4 | 4.8 | | | | |
| SVOC | (TIC) 2,2,6-TRIMETHYL-1-(2-METHYL-CYCLOBUT-2-E | | | | | 2 | 355 | 0.16 | 1.8 | | | | |
| SVOC | (TIC) 2,2-DICHLOROCYCLOPROPYLACETONITRILE | | | | | | | | | 1 | 33 | 0.0022 | 0.0022 |
| SVOC | (TIC) 2,3-DIHYDRO-1H-INDENE | | | | | 1 | 355 | 1.8 | 1.8 | | | | |
| SVOC | (TIC) 2,3-DIHYDRO-1-METHYLINDENE | | | | | 1 | 355 | 1.8 | 1.8 | | | | |
| SVOC | (TIC) 2,4,6-TRIBROMOPHENOL (SUR) | | | | | 1 | 355 | 2.1 | 2.1 | | | | |
| SVOC | (TIC) 2,5-CYCLOHEXADIENE-1,4-DIONE, 2,6-BIS(1, | | | | | 1 | 355 | 1 | 1 | | | | |
| SVOC | (TIC) 2,6,10,14,18-PENTAMETHYL-2,6,10,14,18-EI | 1 | 356 | 0.11 | 0.11 | | | | | | | | |
| SVOC | (TIC) 2,6-DIMETHYL-6-NITRO-2-HE | | | | | 2 | 355 | 0.86 | 0.98 | | | | |
| SVOC | (TIC) 2-.BETA.-PINENE | 7 | 356 | 0.15 | 9 | | | | | | | | |
| SVOC | (TIC) 22,23-DIHYDRO-STIGMASTEROL | 3 | 356 | 0.17 | 6.7 | | | | | | | | |
| SVOC | (TIC) 26-NOR-5-CHOLESTEN-3.BETA.25-ONE | | | | | 3 | 355 | 0.98 | 4.4 | | | | |

**Table 1 Waterbodies TIC Summary (All Areas)**

| Group | Analyte | Soil 0-2 ft | | | | Sediment 0-0.5 ft | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SVOC | (TIC) 26-NOR-5-CHOLESTEN-3.BETA.-O | 2 | 356 | 0.42 | 0.79 | | | | | | | | |
| SVOC | (TIC) 26-NOR-5-CHOLESTEN-3.BETA.-OL-25-ONE | 1 | 356 | 0.15 | 0.15 | 1 | 355 | 0.63 | 0.63 | 1 | 33 | 0.0028 | 0.0028 |
| SVOC | (TIC) 28-NOR-17.ALPHA.(H)-HOPAN | | | | | 3 | 355 | 1.8 | 2.6 | | | | |
| SVOC | (TIC) 28-NOR-17.ALPHA.(H)-HOPANE | 1 | 356 | 0.43 | 0.43 | 25 | 355 | 0.24 | 16 | | | | |
| SVOC | (TIC) 28-NOR-17.BETA.(H)-HOPANE | | | | | 13 | 355 | 0.17 | 9 | | | | |
| SVOC | (TIC) 2-BROMO DODECANE | | | | | 1 | 355 | 0.91 | 0.91 | | | | |
| SVOC | (TIC) 2-BUTENE, 2,3-DIMETHYL- | | | | | 1 | 355 | 0.49 | 0.49 | | | | |
| SVOC | (TIC) 2-FLUOROPHENOL (SUR) | | | | | 1 | 355 | 1.9 | 1.9 | | | | |
| SVOC | (TIC) 2H,8H-BENZO[1,2-B,3,4-B] | | | | | 1 | 355 | 0.45 | 0.45 | | | | |
| SVOC | (TIC) 2H-BENZOCYCLOHEPTEN-2-ONE | | | | | 1 | 355 | 2.2 | 2.2 | | | | |
| SVOC | (TIC) 2-HEPTACOSANONE | 1 | 356 | 0.63 | 0.63 | 8 | 355 | 1.1 | 4.4 | | | | |
| SVOC | (TIC) 2-HEPTADECANONE | | | | | 1 | 355 | 1.7 | 1.7 | | | | |
| SVOC | (TIC) 2-HEXADECANONE | | | | | 2 | 355 | 0.2 | 0.81 | | | | |
| SVOC | (TIC) 2-HEXADECENE, 3,7,11,15-T | | | | | 1 | 355 | 0.92 | 0.92 | | | | |
| SVOC | (TIC) 2H-QUINOLIZINE, 4-(3-FURA | | | | | 1 | 355 | 2.4 | 2.4 | | | | |
| SVOC | (TIC) 2-METHYL-3-PHENYLPYRIDINE | | | | | 2 | 355 | 0.31 | 0.77 | | | | |
| SVOC | (TIC) 2-METHYLOCTADECANE | | | | | 1 | 355 | 10 | 10 | | | | |
| SVOC | (TIC) 2-NAPHTHALENAMINE | 1 | 356 | 0.51 | 0.51 | | | | | | | | |
| SVOC | (TIC) 2-NAPHTHALENEMETHANOL, DECAHYDRO-.ALPHA. | | | | | 7 | 355 | 0.28 | 16 | | | | |
| SVOC | (TIC) 2-NONACOSANONE | | | | | 7 | 355 | 0.58 | 1.5 | | | | |
| SVOC | (TIC) 2-NONADECANONE | | | | | 6 | 355 | 0.15 | 4 | | | | |
| SVOC | (TIC) 2-NONYLPHENOL | | | | | 1 | 355 | 6 | 6 | | | | |
| SVOC | (TIC) 2-OXO-3-PHENYL-6-(4-TOLYL)-1,2,3,4-TETRA | | | | | 1 | 355 | 1.1 | 1.1 | | | | |
| SVOC | (TIC) 2-PENTACOSANONE | 4 | 356 | 0.25 | 1.3 | 13 | 355 | 0.17 | 2.7 | | | | |
| SVOC | (TIC) 2-PENTADECANONE | | | | | 1 | 355 | 0.64 | 0.64 | | | | |
| SVOC | (TIC) 2-PENTADECANONE, 6,10,14-TRIMETHYL- | | | | | 2 | 355 | 0.39 | 0.68 | | | | |
| SVOC | (TIC) 2-PENTANONE, 4-HYDROXY-4- | | | | | 52 | 355 | 41 | 960 | | | | |
| SVOC | (TIC) 2-PENTANONE, 4-HYDROXY-4-METHYL- | | | | | 263 | 355 | 6.8 | 530 | 15 | 33 | 0.0023 | 0.12 |
| SVOC | (TIC) 2-PENTCOSANONE | 1 | 356 | 1.9 | 1.9 | | | | | | | | |
| SVOC | (TIC) 2-PENTENE, 4-METHYL-, (E)- | | | | | 1 | 355 | 0.42 | 0.42 | | | | |
| SVOC | (TIC) 2-PHENANTHRENECARBOXALDEHYDE, 1,2,3,4,4A | | | | | 1 | 355 | 0.21 | 0.21 | | | | |
| SVOC | (TIC) 2-PHENANTHRENOL, 4B,5,6,7,8,8A,9,10-OCTA | | | | | 1 | 355 | 0.38 | 0.38 | | | | |
| SVOC | (TIC) 2-PHENYLNAPHTHALENE | | | | | 8 | 355 | 0.16 | 11 | | | | |
| SVOC | (TIC) 2-PROPANOL, 1-(HEXADECYLOXY)- | | | | | 2 | 355 | 1.2 | 4.6 | | | | |
| SVOC | (TIC) 2-PROPEN-1-ONE, 1-(2-HYDROXYPHENYL)-3-(4 | | | | | 1 | 355 | 1.3 | 1.3 | | | | |
| SVOC | (TIC) 2-PROPENOIC ACID, 3-PHENYL-, (E)- | | | | | 1 | 355 | 0.55 | 0.55 | | | | |
| SVOC | (TIC) 2-UNDECENE, 5-METHYL- | | | | | 1 | 355 | 0.18 | 0.18 | | | | |
| SVOC | (TIC) 3,4-DIHYDROCYCLOPENTA(CD) | | | | | 2 | 355 | 1.5 | 2.1 | | | | |
| SVOC | (TIC) 3,4-DIHYDROCYCLOPENTA(CD)PYRENE (ACEPYRE | | | | | 3 | 355 | 0.33 | 2.3 | | | | |
| SVOC | (TIC) 3,4-OCTADIENE, 7-METHYL- | | | | | 1 | 355 | 0.84 | 0.84 | | | | |
| SVOC | (TIC) 3,5-DICHLOROPHENYL ISOCYANATE | | | | | 1 | 355 | 0.59 | 0.59 | | | | |
| SVOC | (TIC) 3.ALPHA.,5-CYCLO-5.ALPHA.-CHOLESTAN-2-ON | | | | | 1 | 355 | 12 | 12 | | | | |

**Table 1 Waterbodies TIC Summary (All Areas)**

| Group | Analyte | Soil 0-2 ft | | | | Sediment 0-0.5 ft | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SVOC | (TIC) 3-AMINOPYRENE | | | | | 1 | 355 | 12 | 12 | | | | |
| SVOC | (TIC) 3-CARENE | 6 | 356 | 0.24 | 5.6 | | | | | | | | |
| SVOC | (TIC) 3-EICOSENE | 1 | 356 | 0.74 | 0.74 | | | | | | | | |
| SVOC | (TIC) 3-EICOSENE, (E)- | | | | | 5 | 355 | 1.1 | 5.1 | | | | |
| SVOC | (TIC) 3-FLUORANTHENAMINE | | | | | 1 | 355 | 1.1 | 1.1 | | | | |
| SVOC | (TIC) 3H-1,2-DITHIOL-3-ONE, 5-METHYL- | | | | | 1 | 355 | 2.1 | 2.1 | | | | |
| SVOC | (TIC) 3H-3A,7-METHANOAZULENE, 2,4,5,6,7,8-HEXA | | | | | 1 | 355 | 1 | 1 | | | | |
| SVOC | (TIC) 3-METHYL-4-HYDROXYOCTANOIC ACID, .GAMMA. | | | | | 1 | 355 | 1.9 | 1.9 | | | | |
| SVOC | (TIC) 3-METHYLCHOLANTHRENE | | | | | 1 | 355 | 0.22 | 0.22 | | | | |
| SVOC | (TIC) 3-OCTADECENE, (E)- | | | | | 1 | 355 | 1.1 | 1.1 | | | | |
| SVOC | (TIC) 3-OCTANONE | | | | | 1 | 355 | 0.32 | 0.32 | | | | |
| SVOC | (TIC) 3-PENTEN-2-ONE, 4-METHYL- | | | | | 21 | 355 | 0.096 | 1.2 | | | | |
| SVOC | (TIC) 3-PENTENAL, 4-METHYL- | | | | | 1 | 355 | 1.9 | 1.9 | | | | |
| SVOC | (TIC) 3-TETRADECENE, (E)- | | | | | 3 | 355 | 0.13 | 0.35 | | | | |
| SVOC | (TIC) 3-TETRADECENE, (Z)- | | | | | 1 | 355 | 1 | 1 | | | | |
| SVOC | (TIC) 4,4,6A,6B,8A,11,11,14B-OCTAMETHYL-1,4,4A | | | | | 3 | 355 | 1.2 | 3 | | | | |
| SVOC | (TIC) 4,4,6A,6B,8A,11,12,14B-OCTAMETHYL-1,4,4A | | | | | 1 | 355 | 0.99 | 0.99 | | | | |
| SVOC | (TIC) 4,4,8-TRIMETHYLTRICYCLO[6.3.1.0(1,5) ]DO | 1 | 356 | 0.63 | 0.63 | | | | | | | | |
| SVOC | (TIC) 4B,8-DIMETHYL-2-ISOPROPYLPHENANTHRENE | | | | | 5 | 355 | 0.7 | 4.6 | | | | |
| SVOC | (TIC) 4-CYCLOHEXYLIDENE-N-BUTANOL | | | | | 1 | 355 | 0.68 | 0.68 | | | | |
| SVOC | (TIC) 4H-CYCLOPENTA[DEF]PHENANT | | | | | 2 | 355 | 1.2 | 1.8 | | | | |
| SVOC | (TIC) 4H-CYCLOPENTA[DEF]PHENANTHRENE | | | | | 22 | 355 | 0.13 | 19 | | | | |
| SVOC | (TIC) 4-HEPTAFLUOROBUTYRYLOXYHEXADECANE | | | | | 1 | 355 | 0.58 | 0.58 | | | | |
| SVOC | (TIC) 4-METHYLBENZENESULFONAMIDE | 1 | 356 | 0.47 | 0.47 | | | | | | | | |
| SVOC | (TIC) 4-NITRO-4-AMINODIPHENYLSULPHONE | | | | | 1 | 355 | 0.81 | 0.81 | | | | |
| SVOC | (TIC) 4-NONENE, 3-METHYL-, (Z)- | | | | | 1 | 355 | 2.4 | 2.4 | | | | |
| SVOC | (TIC) 4-NONYLPHENOL | | | | | 1 | 355 | 0.27 | 0.27 | | | | |
| SVOC | (TIC) 4-O-ACETYL-2,5-DI-O-METHY | | | | | 1 | 355 | 1.3 | 1.3 | | | | |
| SVOC | (TIC) 4-OCTENE, 2,3,6-TRIMETHYL- | | | | | 1 | 355 | 1.4 | 1.4 | | | | |
| SVOC | (TIC) 5(1H)-AZULENONE, 2,4,6,7,8,8A-HEXAHYDRO- | | | | | 4 | 355 | 0.21 | 9.6 | | | | |
| SVOC | (TIC) 5,12-NAPHTHACENEDIONE | | | | | 5 | 355 | 0.83 | 7.7 | | | | |
| SVOC | (TIC) 5.ALPHA.,6.ALPHA.-EPOXYCHOLEST-7-EN-3.BE | | | | | 1 | 355 | 4.3 | 4.3 | | | | |
| SVOC | (TIC) 5-EICOSENE, (E)- | | | | | 2 | 355 | 1.4 | 3.5 | | | | |
| SVOC | (TIC) 5-EICOSENE,(E)- | 2 | 356 | 0.73 | 0.94 | | | | | | | | |
| SVOC | (TIC) 5H-3,5A-EPOXYNAPHTH[2,1-C]OXEPIN, DODECA | | | | | 1 | 355 | 0.97 | 0.97 | | | | |
| SVOC | (TIC) 5-OCTADECENE, (E)- | | | | | 1 | 355 | 2.3 | 2.3 | | | | |
| SVOC | (TIC) 5-OCTADECENE,(E)- | 1 | 356 | 0.18 | 0.18 | | | | | | | | |
| SVOC | (TIC) 6-ISOPROPENYL-4,8A-DIMETHYL-4A,5,6,7,8,8 | | | | | 1 | 355 | 1.1 | 1.1 | | | | |
| SVOC | (TIC) 7,12A-DIMETHYL-1,2,3,4,4A,11,12,12A-OCTA | 1 | 356 | 0.28 | 0.28 | 2 | 355 | 0.3 | 0.5 | | | | |
| SVOC | (TIC) 7,12-DIHYDROBENZO[K]FLUORANTHENE | | | | | 1 | 355 | 1.3 | 1.3 | | | | |
| SVOC | (TIC) 7H-BENZ[DE]ANTHRACEN-7-ONE | | | | | 6 | 355 | 0.16 | 1.6 | | | | |
| SVOC | (TIC) 7H-BENZO[C]CARBAZOLE | | | | | 2 | 355 | 1.3 | 2.4 | | | | |

**Table 1 Waterbodies TIC Summary (All Areas)**

| Group | Analyte | Soil 0-2 ft | | | | Sediment 0-0.5 ft | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SVOC | (TIC) 7-HEXADECYNE | | | | | 1 | 355 | 0.78 | 0.78 | | | | |
| SVOC | (TIC) 7-HEXYLTRIDECAN-1-OL | 1 | 356 | 1.6 | 1.6 | | | | | | | | |
| SVOC | (TIC) 7-HYDROXY-6-METHOXY-2H-1-BENZOPYRAN-2-ON | | | | | 1 | 355 | 1.7 | 1.7 | | | | |
| SVOC | (TIC) 7-ISOPROPENYL-1,4A-DIMETHYL-4,4A,5,6,7,8 | | | | | 2 | 355 | 0.5 | 0.86 | | | | |
| SVOC | (TIC) 7-NONENAMIDE | | | | | 1 | 355 | 0.29 | 0.29 | | | | |
| SVOC | (TIC) 7-TETRADECYNE | | | | | 1 | 355 | 7.8 | 7.8 | | | | |
| SVOC | (TIC) 8-HEXADECYNE | 1 | 356 | 1 | 1 | | | | | | | | |
| SVOC | (TIC) 9,10,ANTHRACENEDIONE | 4 | 356 | 0.45 | 0.76 | | | | | | | | |
| SVOC | (TIC) 9,10-ANTHRACENEDIONE | 33 | 356 | 0.092 | 4.6 | 18 | 355 | 0.14 | 27 | | | | |
| SVOC | (TIC) 9,10-ANTHRACENEDIONE/UNKNOWN | 1 | 356 | 2.6 | 2.6 | | | | | | | | |
| SVOC | (TIC) 9,10-DIMETHYLANTHRACENE | 1 | 356 | 0.38 | 0.38 | 1 | 355 | 0.43 | 0.43 | | | | |
| SVOC | (TIC) 9,12-OCTADECADIENOICACID(Z,Z)- | 6 | 356 | 0.16 | 0.69 | | | | | | | | |
| SVOC | (TIC) 9-EICOSENE, (E)- | | | | | 1 | 355 | 0.4 | 0.4 | | | | |
| SVOC | (TIC) 9H-CARBAZOLE | 2 | 356 | 0.55 | 1.5 | | | | | | | | |
| SVOC | (TIC) 9-HEXACOSENE | | | | | 1 | 355 | 0.64 | 0.64 | | | | |
| SVOC | (TIC) 9-HEXADECENOIC ACID | | | | | 19 | 355 | 0.42 | 4.8 | | | | |
| SVOC | (TIC) 9H-FLUORENE, 2-METHYL- | | | | | 1 | 355 | 0.82 | 0.82 | | | | |
| SVOC | (TIC) 9H-FLUORENE, 4-METHYL- | | | | | 1 | 355 | 0.61 | 0.61 | | | | |
| SVOC | (TIC) 9H-FLUORENE, 9-(PHENYLMETHYLENE)- | | | | | 1 | 355 | 0.95 | 0.95 | | | | |
| SVOC | (TIC) 9H-XANTHEN-9-ONE, 2-HYDROXY- | | | | | 1 | 355 | 3.8 | 3.8 | | | | |
| SVOC | (TIC) 9-OCTADECENAMIDE, (Z)- | | | | | 20 | 355 | 0.21 | 2.2 | | | | |
| SVOC | (TIC) 9-OCTADECENAMIDE,(Z)- | 2 | 356 | 0.11 | 0.16 | | | | | | | | |
| SVOC | (TIC) 9-OCTADECENE, (E)- | | | | | 1 | 355 | 0.43 | 0.43 | | | | |
| SVOC | (TIC) 9-PHENYL-5H-BENZOCYCLOHEPTENE | | | | | 1 | 355 | 1.1 | 1.1 | | | | |
| SVOC | (TIC) ACETAMIDE | | | | | 1 | 355 | 0.35 | 0.35 | | | | |
| SVOC | (TIC) ACETIC ACID, 3,7,11,15-TETRAMETHYL-HEXAD | | | | | 2 | 355 | 0.45 | 1.8 | | | | |
| SVOC | (TIC) ACETIC ACID, OCTADECYL ES | | | | | 1 | 355 | 3 | 3 | | | | |
| SVOC | (TIC) ACETICACID,OCTADECYLESTER | 1 | 356 | 1.1 | 1.1 | | | | | | | | |
| SVOC | (TIC) ACETOPHENONE | 2 | 356 | 0.1 | 0.38 | 1 | 355 | 0.26 | 0.26 | | | | |
| SVOC | (TIC) ADAMANTANE, 1,3-DIMETHYL- | | | | | 1 | 355 | 0.11 | 0.11 | | | | |
| SVOC | (TIC) ALPHA.-AMYRIN | | | | | 1 | 355 | 1.8 | 1.8 | | | | |
| SVOC | (TIC) ALPHA.-MUUROLENE | 1 | 356 | 0.51 | 0.51 | | | | | | | | |
| SVOC | (TIC) ALPHA.-MUUROLENE-(-) | 2 | 356 | 0.48 | 0.92 | | | | | | | | |
| SVOC | (TIC) ALPHA.-PINENE,(-)- | 3 | 356 | 0.38 | 3.6 | | | | | | | | |
| SVOC | (TIC) ALPHA-AMYRIN | 2 | 356 | 1.5 | 2.4 | 1 | 355 | 14 | 14 | | | | |
| SVOC | (TIC) ALPHA-CARYOPHYLLENE | 3 | 356 | 0.27 | 0.42 | | | | | | | | |
| SVOC | (TIC) ALPHA-CUBEBENE | 1 | 356 | 0.3 | 0.3 | | | | | | | | |
| SVOC | (TIC) ALPHA-PINENE | 5 | 356 | 0.4 | 1.5 | | | | | | | | |
| SVOC | (TIC) ANDROST-4-EN-3-ONE, 17-HYDROXY-, (10,ALP | | | | | 1 | 355 | 0.22 | 0.22 | | | | |
| SVOC | (TIC) ANDROST-4-EN-3-ONE, 17-HYDROXY-, (10.ALP | | | | | 2 | 355 | 0.62 | 6.3 | | | | |
| SVOC | (TIC) ANDROST-4-EN-3-ONE, 17-HYDROXY-, (17.BET | | | | | 1 | 355 | 0.17 | 0.17 | | | | |
| SVOC | (TIC) ANDROST-5-EN-3-OL, 4,4-DIMETHYL-, (3.BET | | | | | 1 | 355 | 3.9 | 3.9 | | | | |

**Table 1 Waterbodies TIC Summary (All Areas)**

| Group | Analyte | Soil 0-2 ft | | | | Sediment 0-0.5 ft | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SVOC | (TIC) ANDROSTAN-17-ONE, 3,11-DIHYDROXY-, (3.AL | | | | | 2 | 355 | 2.6 | 3 | | | | |
| SVOC | (TIC) ANDROSTAN-4-ONE, (5.BETA.)- | | | | | 2 | 355 | 0.41 | 1.1 | | | | |
| SVOC | (TIC) A-NEOGAMMACER-22(29)-EN-3-OL, (3.BETA., | | | | | 1 | 355 | 1.6 | 1.6 | | | | |
| SVOC | (TIC) A-NEOGAMMACER-22(29)-ENE | | | | | 3 | 355 | 0.14 | 1.4 | | | | |
| SVOC | (TIC) ANTHRACENE, 1,4-DIMETHOXY | | | | | 1 | 355 | 1.6 | 1.6 | | | | |
| SVOC | (TIC) ANTHRACENE, 1-METHYL- | | | | | 3 | 355 | 0.1 | 0.59 | | | | |
| SVOC | (TIC) ANTHRACENE, 2-ETHYL- | | | | | 2 | 355 | 0.35 | 0.4 | | | | |
| SVOC | (TIC) ANTHRACENE, 2-METHYL- | | | | | 10 | 355 | 0.15 | 1.1 | | | | |
| SVOC | (TIC) ANTHRACENE, 9-DODECYLTETRADECAHYDRO- | | | | | 4 | 355 | 1.2 | 7.3 | | | | |
| SVOC | (TIC) ANTHRACENE, 9-METHYL- | | | | | 3 | 355 | 0.52 | 1.2 | | | | |
| SVOC | (TIC) ANTHRACENE, 9-PHENYL- | | | | | 1 | 355 | 0.81 | 0.81 | | | | |
| SVOC | (TIC) AZETIDINE, 1-NITROSO- | | | | | 1 | 355 | 1.8 | 1.8 | | | | |
| SVOC | (TIC) AZULENE, 1,2,3,4,5,6,7,8-OCTAHYDRO-1,4-D | | | | | 1 | 355 | 0.59 | 0.59 | | | | |
| SVOC | (TIC) BACCHARANE | | | | | 1 | 355 | 10 | 10 | | | | |
| SVOC | (TIC) BENZ(A)ANTHRACENE-7,12-DIONE | | | | | 3 | 355 | 1.3 | 11 | | | | |
| SVOC | (TIC) BENZ[A]ACRIDINE, 10-METHYL- | | | | | 1 | 355 | 0.47 | 0.47 | | | | |
| SVOC | (TIC) BENZ[A]ANTHRACENE, 11-METHYL- | | | | | 1 | 355 | 1.3 | 1.3 | | | | |
| SVOC | (TIC) BENZ[A]ANTHRACENE, 12-MET | | | | | 1 | 355 | 2.2 | 2.2 | | | | |
| SVOC | (TIC) BENZ[A]ANTHRACENE, 12-METHYL- | | | | | 1 | 355 | 0.98 | 0.98 | | | | |
| SVOC | (TIC) BENZ[A]ANTHRACENE, 1-METHYL- | | | | | 2 | 355 | 0.22 | 0.34 | | | | |
| SVOC | (TIC) BENZ[A]ANTHRACENE, 5-METH | | | | | 1 | 355 | 1.4 | 1.4 | | | | |
| SVOC | (TIC) BENZ[A]ANTHRACENE, 7-METHYL- | | | | | 2 | 355 | 1.2 | 9.5 | | | | |
| SVOC | (TIC) BENZ[A]ANTHRACENE, 8-METHYL- | | | | | 2 | 355 | 0.095 | 1.1 | | | | |
| SVOC | (TIC) BENZ[E]ACEPHENANTHRYLENE | | | | | 2 | 355 | 0.24 | 1 | | | | |
| SVOC | (TIC) BENZ[J]ACEANTHRYLENE, 3-METHYL- | | | | | 2 | 355 | 0.33 | 1 | | | | |
| SVOC | (TIC) BENZALDEHYDE | 2 | 356 | 0.42 | 3.3 | 2 | 355 | 0.09 | 0.15 | | | | |
| SVOC | (TIC) BENZALDEHYDE, 3,5-DICHLORO-2-HYDROXY- | | | | | 1 | 355 | 1 | 1 | | | | |
| SVOC | (TIC) BENZALDEHYDE,4-HYDROXY- | 1 | 356 | 0.48 | 0.48 | | | | | | | | |
| SVOC | (TIC) BENZALDEHYDE,4-HYDROXY-3-METHOXY- | 1 | 356 | 0.3 | 0.3 | | | | | | | | |
| SVOC | (TIC) BENZENE, (1-BUTYLHEPTYL)- | | | | | 5 | 355 | 0.16 | 5.3 | | | | |
| SVOC | (TIC) BENZENE, (1-BUTYLNONYL)- | | | | | 1 | 355 | 0.88 | 0.88 | | | | |
| SVOC | (TIC) BENZENE, (1-BUTYLOCTYL)- | | | | | 2 | 355 | 0.16 | 1.2 | | | | |
| SVOC | (TIC) BENZENE, (1-ETHYLDECYL)- | | | | | 1 | 355 | 3.6 | 3.6 | | | | |
| SVOC | (TIC) BENZENE, (1-ETHYLNONYL)- | | | | | 1 | 355 | 1.6 | 1.6 | | | | |
| SVOC | (TIC) BENZENE, (1-HEXYLHEPTYL)- | | | | | 5 | 355 | 0.61 | 3.1 | | | | |
| SVOC | (TIC) BENZENE, (1-METHYL-1-PROPENYL)-, (Z)- | | | | | 1 | 355 | 1.4 | 1.4 | | | | |
| SVOC | (TIC) BENZENE, (1-PENTYLHEPTYL)- | | | | | 5 | 355 | 1.6 | 8 | | | | |
| SVOC | (TIC) BENZENE, (1-PENTYLOCTYL)- | | | | | 1 | 355 | 4.3 | 4.3 | | | | |
| SVOC | (TIC) BENZENE, (1-PROPYLHEPTYL)- | | | | | 1 | 355 | 1.6 | 1.6 | | | | |
| SVOC | (TIC) BENZENE, (1-PROPYLOCTYL)- | | | | | 3 | 355 | 0.49 | 6.2 | | | | |
| SVOC | (TIC) BENZENE, 1,2,3-TRIMETHYL- | | | | | 2 | 355 | 0.73 | 6.1 | | | | |
| SVOC | (TIC) BENZENE, 1,2,4,5-TETRAMETHYL- | | | | | 3 | 355 | 0.6 | 2 | | | | |

**Table 1 Waterbodies TIC Summary (All Areas)**

| Group | Analyte | Soil 0-2 ft | | | | Sediment 0-0.5 ft | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SVOC | (TIC) BENZENE, 1,2-DICHLORO-3-ISOCYANATO- | | | | | 1 | 355 | 0.13 | 0.13 | | | | |
| SVOC | (TIC) BENZENE, 1,2-DICHLORO-4-ISOCYANATO- | | | | | 5 | 355 | 0.17 | 0.71 | | | | |
| SVOC | (TIC) BENZENE, 1,2-DIETHYL- | | | | | 1 | 355 | 1.4 | 1.4 | | | | |
| SVOC | (TIC) BENZENE, 1,3-DIETHYL- | | | | | 2 | 355 | 0.18 | 1.4 | | | | |
| SVOC | (TIC) BENZENE, 1,4-DICHLORO-2-ISOCYANATO- | | | | | 1 | 355 | 0.88 | 0.88 | | | | |
| SVOC | (TIC) BENZENE, 1,4-DIETHYL-2-METHYL- | | | | | 1 | 355 | 0.45 | 0.45 | | | | |
| SVOC | (TIC) BENZENE, 1-CHLORO-2-ISOCYANATO- | | | | | 3 | 355 | 0.38 | 2.5 | | | | |
| SVOC | (TIC) BENZENE, 1-ETHYL-2,3-DIMETHYL- | | | | | 4 | 355 | 0.61 | 3.3 | | | | |
| SVOC | (TIC) BENZENE, 1-ETHYL-2,4-DIMETHYL- | | | | | 2 | 355 | 1.4 | 1.8 | | | | |
| SVOC | (TIC) BENZENE, 1-METHYL-2-(1-METHYLETHYL)- | | | | | 2 | 355 | 1.8 | 7.8 | | | | |
| SVOC | (TIC) BENZENE, 1-METHYL-3-PROPYL- | | | | | 2 | 355 | 1.7 | 10 | | | | |
| SVOC | (TIC) BENZENE, 2,4-DIETHYL-1-METHYL- | | | | | 1 | 355 | 0.44 | 0.44 | | | | |
| SVOC | (TIC) BENZENE, 2-ETHYL-1,3-DIMETHYL- | | | | | 2 | 355 | 1.2 | 2.9 | | | | |
| SVOC | (TIC) BENZENE, 4-ETHYL-1,2-DIMETHYL- | | | | | 2 | 355 | 0.89 | 7.9 | | | | |
| SVOC | (TIC) BENZENE, CHLOROISOCYANATO- | | | | | 3 | 355 | 0.57 | 0.63 | | | | |
| SVOC | (TIC) BENZENE, ETHOXY- | | | | | 1 | 355 | 1.1 | 1.1 | | | | |
| SVOC | (TIC) BENZENE, ISOCYANATO- | | | | | 1 | 355 | 0.81 | 0.81 | | | | |
| SVOC | (TIC) BENZENE, PROPYL- | | | | | 2 | 355 | 0.47 | 0.9 | | | | |
| SVOC | (TIC) BENZENE,1,2-(METHYLENEDIOXY)-4-PROPENYL | 2 | 356 | 0.72 | 0.74 | | | | | | | | |
| SVOC | (TIC) BENZENEACETIC ACID | 5 | 356 | 0.12 | 1.7 | 1 | 355 | 0.24 | 0.24 | 2 | 33 | 0.0028 | 0.0042 |
| SVOC | (TIC) BENZENEACETICACID | 35 | 356 | 0.097 | 3.4 | 1 | 355 | 0.26 | 0.26 | | | | |
| SVOC | (TIC) BENZENEETHANAMINE, N-(1-METHYLETHYLIDENE | | | | | 1 | 355 | 0.13 | 0.13 | | | | |
| SVOC | (TIC) BENZENEPROPANOIC ACID | | | | | | | | | 1 | 33 | 0.0032 | 0.0032 |
| SVOC | (TIC) BENZENESULFONAMIDE, 4-METHYL- | | | | | 1 | 355 | 0.19 | 0.19 | | | | |
| SVOC | (TIC) BENZO(A)ACRIDINE | | | | | 3 | 355 | 1.1 | 6.9 | | | | |
| SVOC | (TIC) BENZO(B)NAPHTHOFURANISOMER | 8 | 356 | 0.15 | 2.3 | 1 | 355 | 0.22 | 0.22 | | | | |
| SVOC | (TIC) BENZO(B)NAPHTHOFURANISOMER/UNKNOWN | 1 | 356 | 2.7 | 2.7 | | | | | | | | |
| SVOC | (TIC) BENZO(B)NAPHTHOTHIOPHENEISOMER | 10 | 356 | 0.15 | 5.1 | 3 | 355 | 0.16 | 2.3 | | | | |
| SVOC | (TIC) BENZO(C)CARBAZOLE | | | | | 2 | 355 | 0.25 | 1.4 | | | | |
| SVOC | (TIC) BENZO(K)FLUORANTHENE | | | | | 2 | 355 | 2 | 2.8 | | | | |
| SVOC | (TIC) BENZO[B]NAPHTHO[1,2-D]THIOPHENE | | | | | 3 | 355 | 1.2 | 9.8 | | | | |
| SVOC | (TIC) BENZO[B]NAPHTHO[2,1-D]THI | | | | | 2 | 355 | 1.4 | 2.7 | | | | |
| SVOC | (TIC) BENZO[B]NAPHTHO[2,1-D]THIOPHENE | | | | | 12 | 355 | 0.24 | 18 | | | | |
| SVOC | (TIC) BENZO[B]NAPHTHO[2,3-D]FUR | | | | | 1 | 355 | 1.1 | 1.1 | | | | |
| SVOC | (TIC) BENZO[B]NAPHTHO[2,3-D]FURAN | | | | | 4 | 355 | 0.15 | 7.7 | | | | |
| SVOC | (TIC) BENZO[B]NAPHTHO[2,3-D]THI | | | | | 1 | 355 | 1.4 | 1.4 | | | | |
| SVOC | (TIC) BENZO[B]TRIPHENYLENE | 1 | 356 | 0.61 | 0.61 | | | | | | | | |
| SVOC | (TIC) BENZO[C]PHENANTHRENE | | | | | 7 | 355 | 0.32 | 2.3 | | | | |
| SVOC | (TIC) BENZO[C]PHENANTHRENE, 6-METHYL- | | | | | 1 | 355 | 0.28 | 0.28 | | | | |
| SVOC | (TIC) BENZO[E]PYRENE | | | | | 58 | 355 | 0.14 | 60 | | | | |
| SVOC | (TIC) BENZO[GHI]FLUORANTHENE | | | | | 6 | 355 | 0.1 | 2.6 | | | | |
| SVOC | (TIC) BENZO[J]FLUORANTHENE | | | | | 4 | 355 | 1 | 12 | | | | |

**Table 1 Waterbodies TIC Summary (All Areas)**

| Group | Analyte | Soil 0-2 ft | | | | Sediment 0-0.5 ft | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SVOC | (TIC) BENZO[K]FLUORANTHENE | | | | | 1 | 355 | 1.5 | 1.5 | | | | |
| SVOC | (TIC) BENZO[KL]XANTHENE | | | | | 1 | 355 | 1.4 | 1.4 | | | | |
| SVOC | (TIC) BENZOCARBAZOLEISOMER | 2 | 356 | 0.15 | 6.8 | | | | | | | | |
| SVOC | (TIC) BENZOIC ACID | 27 | 356 | 0.089 | 13 | 1 | 355 | 0.35 | 0.35 | | | | |
| SVOC | (TIC) BENZOICACID,2,5-DIHYDROXY-,METHYLEST | 1 | 356 | 0.12 | 0.12 | | | | | | | | |
| SVOC | (TIC) BENZOICACID,4-HYDROXY- | 1 | 356 | 1.3 | 1.3 | | | | | | | | |
| SVOC | (TIC) BENZYLBUTYLPHTHALATE | 1 | 356 | 0.089 | 0.089 | | | | | | | | |
| SVOC | (TIC) BETA.-AMYRIN | | | | | 3 | 355 | 1.1 | 2.8 | | | | |
| SVOC | (TIC) BETA.-SELINENE | 1 | 356 | 2.8 | 2.8 | | | | | | | | |
| SVOC | (TIC) BETA.-SITOSTEROL | | | | | 5 | 355 | 1.5 | 7.1 | | | | |
| SVOC | (TIC) BETA-AMYRIN | 1 | 356 | 1.6 | 1.6 | | | | | | | | |
| SVOC | (TIC) BETA-PINENE | 1 | 356 | 1.9 | 1.9 | | | | | | | | |
| SVOC | (TIC) BETA-SITOSTEROL | 34 | 356 | 0.34 | 5 | 8 | 355 | 0.45 | 12 | | | | |
| SVOC | (TIC) BICYCLO[2.2.1]HEPTAN-2-ON | | | | | 1 | 355 | 0.97 | 0.97 | | | | |
| SVOC | (TIC) BICYCLO[2.2.1]HEPTAN-2-ONE, 1,7,7-TRIMET | 1 | 356 | 0.28 | 0.28 | | | | | | | | |
| SVOC | (TIC) BICYCLO[2.2.1]HEPTAN-2-ONE,1,7,7-TRIMET | 1 | 356 | 0.19 | 0.19 | | | | | | | | |
| SVOC | (TIC) BICYCLO[2.2.1]HEPTANE,2,2-DIMETHYL-3-ME | 1 | 356 | 0.6 | 0.6 | | | | | | | | |
| SVOC | (TIC) BICYCLO[2.2.1]HEPTANE,7,7-DIMETHYL-2-ME | 1 | 356 | 0.14 | 0.14 | | | | | | | | |
| SVOC | (TIC) BICYCLO[3.1.0]HEXANE, 4-M | | | | | 1 | 355 | 70 | 70 | | | | |
| SVOC | (TIC) BICYCLO[3.1.1]HEPT-2-ENE, | | | | | 1 | 355 | 52 | 52 | | | | |
| SVOC | (TIC) BICYCLO[3.1.1]HEPT-2-ENE, 3,6,6-TRIMETHY | | | | | 1 | 355 | 0.76 | 0.76 | | | | |
| SVOC | (TIC) BICYCLO[3.1.1]HEPT-2-ENE,3,6,6-TRIMETHY | 1 | 356 | 1.8 | 1.8 | | | | | | | | |
| SVOC | (TIC) BICYCLO[3.1.1]HEPTANE,6,6-DIMETHYL-2-ME | 2 | 356 | 0.48 | 0.98 | | | | | | | | |
| SVOC | (TIC) BICYCLO[3-1-1]HEPT-2-ENE, 3,6,6-TRIMETHY | | | | | 1 | 355 | 0.57 | 0.57 | | | | |
| SVOC | (TIC) BICYCLO[4.1.0]HEPTANE, 3, | | | | | 1 | 355 | 3.3 | 3.3 | | | | |
| SVOC | (TIC) BICYCLO[5.2.0]NONANE,2-METHYLENE-4,8,8- | 1 | 356 | 0.93 | 0.93 | | | | | | | | |
| SVOC | (TIC) BICYCLO[7.2.0]UNDE-4-ENE | 1 | 356 | 0.61 | 0.61 | | | | | | | | |
| SVOC | (TIC) BICYCLO[7.2.0]UNDEC-4-ENE,4,11,11-TRIME | 4 | 356 | 0.14 | 2.2 | | | | | | | | |
| SVOC | (TIC) BIS(2-ETHYLHEXYL) PHTHALATE | | | | | 22 | 355 | 0.13 | 14 | | | | |
| SVOC | (TIC) BROMOACETIC ACID, OCTADECYL ESTER | | | | | 1 | 355 | 2.2 | 2.2 | | | | |
| SVOC | (TIC) BUTANE, 2-METHOXY-2-METHYL- | | | | | | | | | 4 | 33 | 0.17 | 0.21 |
| SVOC | (TIC) BUTANE, 2-METHOXY-2-METHYL-, FILTERED | | | | | | | | | 4 | 33 | 0.14 | 0.2 |
| SVOC | (TIC) BUTANOIC ACID, 2-METHYL- | | | | | 1 | 355 | 0.58 | 0.58 | 1 | 33 | 0.0036 | 0.0036 |
| SVOC | (TIC) BUTANOIC ACID, 3-METHYL- | | | | | | | | | 2 | 33 | 0.0039 | 0.0064 |
| SVOC | (TIC) BUTYL ESTER HEXADECANOIC ACI | 1 | 356 | 3.1 | 3.1 | | | | | | | | |
| SVOC | (TIC) BUTYL ESTER OCTADECANOIC ACI | 11 | 356 | 0.1 | 4.9 | | | | | | | | |
| SVOC | (TIC) C(14A)-HOMO-27-NOR-14.BETA.-GAMMACERAN-3 | | | | | 2 | 355 | 1.3 | 2.9 | | | | |
| SVOC | (TIC) C10H22ALKANE | 2 | 356 | 0.78 | 0.89 | | | | | | | | |
| SVOC | (TIC) C15H10/C15H12PAHS | 5 | 356 | 0.11 | 4.8 | | | | | | | | |
| SVOC | (TIC) C15H10/C15H12PAHS/UNKNOWN | | | | | 1 | 355 | 0.74 | 0.74 | | | | |
| SVOC | (TIC) C15H10PAH | 22 | 356 | 0.11 | 10 | 2 | 355 | 0.33 | 1.3 | | | | |
| SVOC | (TIC) C15H12PAH | 17 | 356 | 0.087 | 5.2 | 2 | 355 | 0.17 | 6.2 | | | | |

**Table 1 Waterbodies TIC Summary (All Areas)**

| Group | Analyte | Soil 0-2 ft | | | | Sediment 0-0.5 ft | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SVOC | (TIC) C15H12PAH/UNKNOWN | 2 | 356 | 0.11 | 0.37 | 1 | 355 | 1.7 | 1.7 | | | | |
| SVOC | (TIC) C16H12PAH | 1 | 356 | 0.8 | 0.8 | | | | | | | | |
| SVOC | (TIC) C16H14PAH | 3 | 356 | 0.26 | 8.3 | 1 | 355 | 0.1 | 0.1 | | | | |
| SVOC | (TIC) C16H14PAH/UNKNOWN | 1 | 356 | 0.76 | 0.76 | | | | | | | | |
| SVOC | (TIC) C17H10OKETONE | 10 | 356 | 0.096 | 2.4 | | | | | | | | |
| SVOC | (TIC) C17H10OKETONE/UNKNOWN | 2 | 356 | 0.19 | 1.7 | | | | | | | | |
| SVOC | (TIC) C17H10PAH/UNKNOWN | 1 | 356 | 2.3 | 2.3 | | | | | | | | |
| SVOC | (TIC) C17H12PAH | 30 | 356 | 0.085 | 8.5 | 3 | 355 | 0.3 | 9.5 | | | | |
| SVOC | (TIC) C17H12PAH/UNKNOWN | 2 | 356 | 0.29 | 1.9 | 1 | 355 | 0.13 | 0.13 | | | | |
| SVOC | (TIC) C18H10/C18H12PAHS | 1 | 356 | 0.16 | 0.16 | | | | | | | | |
| SVOC | (TIC) C18H10PAH | 6 | 356 | 0.17 | 5.4 | | | | | | | | |
| SVOC | (TIC) C18H12PAH | 2 | 356 | 0.14 | 7.6 | 1 | 355 | 2.1 | 2.1 | | | | |
| SVOC | (TIC) C18H12PAH/UNKNOWN | 1 | 356 | 1.8 | 1.8 | 1 | 355 | 0.13 | 0.13 | | | | |
| SVOC | (TIC) C19H14PAH | 11 | 356 | 0.085 | 5.5 | 2 | 355 | 0.096 | 3.1 | | | | |
| SVOC | (TIC) C20H12PAH | 39 | 356 | 0.096 | 21 | 4 | 355 | 0.75 | 7.7 | | | | |
| SVOC | (TIC) C20H12PAH/UNKNOWN | 3 | 356 | 0.2 | 1.4 | | | | | | | | |
| SVOC | (TIC) C20H42ALKANE | 3 | 356 | 0.25 | 1.3 | | | | | | | | |
| SVOC | (TIC) C23H48ALKANE | | | | | 1 | 355 | 1.2 | 1.2 | | | | |
| SVOC | (TIC) C9H20ALKANE | 1 | 356 | 0.1 | 0.1 | | | | | | | | |
| SVOC | (TIC) CAMPESTEROL | 13 | 356 | 0.2 | 2.3 | 4 | 355 | 0.94 | 3.9 | | | | |
| SVOC | (TIC) CAMPHENE | 2 | 356 | 0.08 | 0.42 | 1 | 355 | 8.2 | 8.2 | | | | |
| SVOC | (TIC) CAMPHOR | 7 | 356 | 0.18 | 11 | | | | | | | | |
| SVOC | (TIC) CARBAZOLE | | | | | 1 | 355 | 2.4 | 2.4 | | | | |
| SVOC | (TIC) CARYOPHYLLENE | 6 | 356 | 0.21 | 1.9 | 3 | 355 | 0.3 | 1.3 | | | | |
| SVOC | (TIC) CARYOPHYLLENEOXIDE | 1 | 356 | 0.2 | 0.2 | | | | | | | | |
| SVOC | (TIC) CARYPHYLLENE | 1 | 356 | 0.6 | 0.6 | | | | | | | | |
| SVOC | (TIC) CEDROL | 1 | 356 | 0.87 | 0.87 | | | | | | | | |
| SVOC | (TIC) CHLOROANILINE ISOMER | 1 | 356 | 3.3 | 3.3 | | | | | | | | |
| SVOC | (TIC) CHOLEST-4-EN-3-ONE | 1 | 356 | 3.9 | 3.9 | 1 | 355 | 13 | 13 | | | | |
| SVOC | (TIC) CHOLEST-5-EN-3-OL (3.BETA.)- | | | | | 2 | 355 | 0.89 | 3.1 | | | | |
| SVOC | (TIC) CHOLEST-5-EN-3-ONE | | | | | 3 | 355 | 3.2 | 20 | | | | |
| SVOC | (TIC) CHOLEST-5-EN-3-ONE, 4,4-DIMETHYL- | | | | | 1 | 355 | 8 | 8 | | | | |
| SVOC | (TIC) CHOLEST-5-ENE, 3-METHOXY-, (3.BETA.)- | | | | | 1 | 355 | 0.36 | 0.36 | | | | |
| SVOC | (TIC) CHOLESTA-3,5-DIENE | | | | | 1 | 355 | 6.2 | 6.2 | | | | |
| SVOC | (TIC) CHOLESTA-5,22-DIEN-3-OL, (3.BETA.)- | | | | | 1 | 355 | 8 | 8 | | | | |
| SVOC | (TIC) CHOLESTAN-3.BETA.-OL | 1 | 356 | 1.9 | 1.9 | 2 | 355 | 1.4 | 2.9 | | | | |
| SVOC | (TIC) CHOLESTAN-3BETA-OL | | | | | 1 | 355 | 0.46 | 0.46 | | | | |
| SVOC | (TIC) CHOLESTAN-3-OL | 4 | 356 | 0.55 | 5.1 | 6 | 355 | 0.28 | 4.2 | | | | |
| SVOC | (TIC) CHOLESTAN-3-OL, 4-METHYL-, (3.BETA.,4.BE | | | | | 2 | 355 | 4 | 5.5 | | | | |
| SVOC | (TIC) CHOLESTAN-3-OL, ACETATE, (3.BETA.,5.ALPH | | | | | 4 | 355 | 4.2 | 19 | | | | |
| SVOC | (TIC) CHOLESTAN-3-ONE | 1 | 356 | 1.8 | 1.8 | | | | | | | | |
| SVOC | (TIC) CHOLESTAN-3-ONE, 4,4-DIMETHYL-, (5.ALPHA | | | | | 2 | 355 | 9.3 | 14 | | | | |

**Table 1 Waterbodies TIC Summary (All Areas)**

| Group | Analyte | Soil 0-2 ft | | | | Sediment 0-0.5 ft | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SVOC | (TIC) CHOLESTANE | | | | | 1 | 355 | 7.4 | 7.4 | | | | |
| SVOC | (TIC) CHOLESTANE, 14-METHYL-, (5.ALPHA.)- | | | | | 1 | 355 | 2.2 | 2.2 | | | | |
| SVOC | (TIC) CHOLESTANE, 3-(ETHYLTHIO)-, (3.BETA.,5.A | | | | | 2 | 355 | 7.4 | 16 | | | | |
| SVOC | (TIC) CHOLESTANE, 3-ETHOXY-, (3 | | | | | 1 | 355 | 23 | 23 | | | | |
| SVOC | (TIC) CHOLESTANE, 3-ETHOXY-, (3.BETA.,5.ALPHA. | | | | | 10 | 355 | 1.5 | 36 | | | | |
| SVOC | (TIC) CHOLESTANE, 4,5-EPOXY-, ( | | | | | 1 | 355 | 4.5 | 4.5 | | | | |
| SVOC | (TIC) CHOLESTANE, 4,5-EPOXY-, (4.ALPHA.,5.ALPH | | | | | 3 | 355 | 1.9 | 4.4 | | | | |
| SVOC | (TIC) CHOLESTANOL | 1 | 356 | 26 | 26 | 91 | 355 | 0.2 | 78 | | | | |
| SVOC | (TIC) CHOLESTEROL | 1 | 356 | 0.089 | 0.089 | 70 | 355 | 0.28 | 57 | | | | |
| SVOC | (TIC) CHONDRILLASTEROL | | | | | 6 | 355 | 1.5 | 8.5 | | | | |
| SVOC | (TIC) CHRYSENE, 1-METHYL- | | | | | 1 | 355 | 1.8 | 1.8 | | | | |
| SVOC | (TIC) CHRYSENE, 3-METHYL- | | | | | 1 | 355 | 1.2 | 1.2 | | | | |
| SVOC | (TIC) CHRYSENE, 4-METHYL- | | | | | 2 | 355 | 0.26 | 0.54 | | | | |
| SVOC | (TIC) CHRYSENE, 5-METHYL- | | | | | 2 | 355 | 0.44 | 1.5 | | | | |
| SVOC | (TIC) CHRYSENE, 6-METHYL- | | | | | 2 | 355 | 0.11 | 0.82 | | | | |
| SVOC | (TIC) CINNAMOYLGLYCINE,METHYLESTER | 1 | 356 | 0.15 | 0.15 | | | | | | | | |
| SVOC | (TIC) CINNAMYL CINNAMATE | | | | | 5 | 355 | 0.085 | 6.7 | | | | |
| SVOC | (TIC) CINNAMYLCINNAMATE | 16 | 356 | 0.29 | 9.9 | | | | | | | | |
| SVOC | (TIC) COPAENE | 5 | 356 | 0.1 | 0.42 | 1 | 355 | 0.12 | 0.12 | | | | |
| SVOC | (TIC) COPROSTAN-3-ONE | | | | | 20 | 355 | 0.18 | 6.6 | | | | |
| SVOC | (TIC) CYCLIC OCTAATOMIC SULFUR | | | | | 14 | 355 | 0.089 | 6 | 3 | 33 | 0.0041 | 0.012 |
| SVOC | (TIC) CYCLODECANE | 1 | 356 | 0.14 | 0.14 | | | | | | | | |
| SVOC | (TIC) CYCLODODECANE | | | | | 11 | 355 | 0.14 | 1.5 | | | | |
| SVOC | (TIC) CYCLOHEXADECANE | 1 | 356 | 0.14 | 0.14 | | | | | | | | |
| SVOC | (TIC) CYCLOHEXANE, 1-METHYL-4-( | | | | | 1 | 355 | 87 | 87 | | | | |
| SVOC | (TIC) CYCLOHEXANE,1-METHYL-4-(1-METHYLETHYLID | 1 | 356 | 0.93 | 0.93 | | | | | | | | |
| SVOC | (TIC) CYCLOHEXANECARBOXYLIC ACID, 1-PHENYL-, M | | | | | 1 | 355 | 7.8 | 7.8 | | | | |
| SVOC | (TIC) CYCLOHEXANECARBOXYLICACID | 1 | 356 | 3 | 3 | | | | | | | | |
| SVOC | (TIC) CYCLOHEXANONE, 2,3-DIMETHYL- | | | | | 1 | 355 | 2.8 | 2.8 | | | | |
| SVOC | (TIC) CYCLOHEXASILOXANE, DODECAMETHYL- | | | | | | | | | 1 | 33 | 0.0022 | 0.0022 |
| SVOC | (TIC) CYCLOHEXENE, 1-METHYL-4-( | | | | | 18 | 355 | 0.66 | 36 | | | | |
| SVOC | (TIC) CYCLOHEXENE, 1-METHYL-4-(5-METHYL-1-METH | | | | | 2 | 355 | 0.27 | 2 | | | | |
| SVOC | (TIC) CYCLOOCTACOSANE | 1 | 356 | 0.24 | 0.24 | | | | | | | | |
| SVOC | (TIC) CYCLOPENTA(CD)PYRENE, 3,4-DIHYDRO- | | | | | 3 | 355 | 0.24 | 9.5 | | | | |
| SVOC | (TIC) CYCLOPENTA(DEF)PHENANTHRENONE | | | | | 1 | 355 | 0.14 | 0.14 | | | | |
| SVOC | (TIC) CYCLOPENTA[CD]PYRENE | | | | | 2 | 355 | 1.9 | 3 | | | | |
| SVOC | (TIC) CYCLOPENTADECANE | | | | | 1 | 355 | 0.15 | 0.15 | | | | |
| SVOC | (TIC) CYCLOPROPANENONANOIC ACID, 2-[(2-BUTYLCY | | | | | 3 | 355 | 0.24 | 3.6 | | | | |
| SVOC | (TIC) CYCLOTETRACOSANE | 16 | 356 | 0.2 | 1.9 | 5 | 355 | 1.2 | 6.8 | | | | |
| SVOC | (TIC) D:A-FRIEDOOLEANAN-7-OL, ACETATE, (7.ALPH | | | | | 2 | 355 | 3.5 | 4.5 | | | | |
| SVOC | (TIC) D:A-FRIEDOURSAN-3-ONE | | | | | 2 | 355 | 2.3 | 4 | | | | |
| SVOC | (TIC) D:B-FRIEDO-B-A-NEOGAMMACER-5-EN-3-OL, | | | | | 1 | 355 | 13 | 13 | | | | |

**Table 1 Waterbodies TIC Summary (All Areas)**

| Group | Analyte | Soil 0-2 ft | | | | Sediment 0-0.5 ft | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SVOC | (TIC) D:C-FREIDOOLEAN-8-EN-3-ONE | 1 | 356 | 0.78 | 0.78 | | | | | | | | |
| SVOC | (TIC) D:C-FRIEDOOLEAN-8-EN-3-ON | | | | | 5 | 355 | 2.1 | 42 | | | | |
| SVOC | (TIC) D:C-FRIEDOOLEAN-8-EN-3-ONE | 4 | 356 | 0.58 | 10 | 26 | 355 | 0.55 | 78 | | | | |
| SVOC | (TIC) D:C-FRIEDOOLEANAN-3-ONE | | | | | 24 | 355 | 0.8 | 44 | | | | |
| SVOC | (TIC) D_B-FRIEDO-B_A-NEOGAMMA | | | | | 1 | 355 | 7.7 | 7.7 | | | | |
| SVOC | (TIC) D-C-FRIEDOOLEAN-8-EN-3-ONE | | | | | 3 | 355 | 3.8 | 6.5 | | | | |
| SVOC | (TIC) DC-FRIEDOOLEAN-8-EN-3-ONE | | | | | 1 | 355 | 9 | 9 | | | | |
| SVOC | (TIC) DDDISOMER | 1 | 356 | 0.47 | 0.47 | | | | | | | | |
| SVOC | (TIC) DDDISOMER/C17H12PAH | 1 | 356 | 0.34 | 0.34 | | | | | | | | |
| SVOC | (TIC) DECAHYDRO-4,4,8,9,10-PENTAMETHYLNAPHTHAL | | | | | 1 | 355 | 0.14 | 0.14 | | | | |
| SVOC | (TIC) DECAHYDRODIMETHYLNAPHTHALENEISOMER | 1 | 356 | 0.16 | 0.16 | | | | | | | | |
| SVOC | (TIC) DECAHYDROMETHYLNAPHTHALENEISOMER | 1 | 356 | 0.37 | 0.37 | | | | | | | | |
| SVOC | (TIC) DECANE | | | | | | | | | 4 | 33 | 0.0021 | 0.0025 |
| SVOC | (TIC) DECANE, 2,2,8-TRIMETHYL- | | | | | 1 | 355 | 0.19 | 0.19 | | | | |
| SVOC | (TIC) DECANE, 2,3,8-TRIMETHYL- | | | | | 1 | 355 | 0.2 | 0.2 | | | | |
| SVOC | (TIC) DECANE, 3,7-DIMETHYL- | | | | | 4 | 355 | 0.19 | 8.4 | | | | |
| SVOC | (TIC) DECANE, 3,8-DIMETHYL- | | | | | 2 | 355 | 0.27 | 7.7 | | | | |
| SVOC | (TIC) DECANE, 3-METHYL- | | | | | 3 | 355 | 0.53 | 2.7 | | | | |
| SVOC | (TIC) DECANE, 4-METHYL- | | | | | 1 | 355 | 0.92 | 0.92 | | | | |
| SVOC | (TIC) DECANE, 5,6-DIPROPYL- | | | | | 1 | 355 | 1.2 | 1.2 | | | | |
| SVOC | (TIC) DECANE, 5-ETHYL-5-METHYL- | | | | | 1 | 355 | 1.2 | 1.2 | | | | |
| SVOC | (TIC) DECANE, 5-METHYL- | | | | | 1 | 355 | 0.91 | 0.91 | | | | |
| SVOC | (TIC) DECANE, 5-PROPYL- | | | | | 1 | 355 | 0.45 | 0.45 | | | | |
| SVOC | (TIC) DECANE, FILTERED | | | | | | | | | 4 | 33 | 0.0022 | 0.0026 |
| SVOC | (TIC) DEGRADATIONPRODUCTOF2,4,6-TRIBROMOPHENOL | | | | | | | | | 1 | 33 | 0.003 | 0.003 |
| SVOC | (TIC) DELTA.3-CARENE | 2 | 356 | 0.5 | 1.8 | | | | | | | | |
| SVOC | (TIC) DELTA.-CADINENE | 1 | 356 | 0.65 | 0.65 | | | | | | | | |
| SVOC | (TIC) D-FRIEDOOLEAN-14-EN-3-ONE | | | | | 45 | 355 | 0.12 | 40 | | | | |
| SVOC | (TIC) D-FRIEDOOLEAN-14-ENE, 3-METHOXY-, (3.BET | | | | | 3 | 355 | 2.1 | 18 | | | | |
| SVOC | (TIC) D-HOMOANDROSTANE, (5.ALPH | | | | | 4 | 355 | 4.8 | 19 | | | | |
| SVOC | (TIC) D-HOMOANDROSTANE, (5.ALPHA.,13.ALPHA.)- | | | | | 4 | 355 | 0.41 | 6.3 | | | | |
| SVOC | (TIC) DIBENZ(A,E)ACEANTHRYLENE | | | | | 1 | 355 | 1.1 | 1.1 | | | | |
| SVOC | (TIC) DIBENZOFURAN | | | | | 3 | 355 | 0.18 | 0.39 | | | | |
| SVOC | (TIC) DIBENZOTHIOPHENE | 1 | 356 | 4.4 | 4.4 | 6 | 355 | 0.13 | 0.51 | | | | |
| SVOC | (TIC) DIBENZOTHIOPHENE, 3-METHYL- | | | | | 3 | 355 | 0.43 | 0.83 | | | | |
| SVOC | (TIC) DICHLOROANILINEISOMER | 1 | 356 | 1.4 | 1.4 | | | | | | | | |
| SVOC | (TIC) DIETHYLTOLUAMIDE | | | | | 1 | 355 | 1.3 | 1.3 | | | | |
| SVOC | (TIC) DIHYDROCHOLESTEROL | | | | | 1 | 355 | 1.1 | 1.1 | | | | |
| SVOC | (TIC) DIMETHYLETHYLPHENOLISOMER | | | | | | | | | 1 | 33 | 0.0078 | 0.0078 |
| SVOC | (TIC) DINAPHTHO[1,2-B,1,2-D]FURAN | | | | | 1 | 355 | 2.2 | 2.2 | | | | |
| SVOC | (TIC) DINAPHTHO[1,2-B:1,2-D]FURAN | | | | | 2 | 355 | 0.18 | 6.4 | | | | |
| SVOC | (TIC) DINAPHTHO[1,2-B:1,2-D]THIOPHENE | | | | | 1 | 355 | 13 | 13 | | | | |

**Table 1 Waterbodies TIC Summary (All Areas)**

| Group | Analyte | Soil 0-2 ft | | | | Sediment 0-0.5 ft | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SVOC | (TIC) DIPHENYL ETHER | | | | | 3 | 355 | 0.37 | 16 | | | | |
| SVOC | (TIC) D-LIMONENE | 2 | 356 | 1.2 | 1.3 | | | | | | | | |
| SVOC | (TIC) DL-LIMONENE | 4 | 356 | 0.27 | 3.8 | | | | | | | | |
| SVOC | (TIC) DOCOSANE | | | | | 6 | 355 | 0.99 | 8.7 | | | | |
| SVOC | (TIC) DOCOSANE, 11-BUTYL- | | | | | 2 | 355 | 1.3 | 4.6 | | | | |
| SVOC | (TIC) DOCOSANE, 9-BUTYL- | | | | | 2 | 355 | 2.7 | 6.6 | | | | |
| SVOC | (TIC) DOCOSANOIC ACID | 11 | 356 | 0.27 | 1.5 | | | | | | | | |
| SVOC | (TIC) DOCOSANOICACID | 1 | 356 | 0.33 | 0.33 | | | | | | | | |
| SVOC | (TIC) DODECANAMIDE | | | | | 6 | 355 | 0.1 | 0.23 | | | | |
| SVOC | (TIC) DODECANE | | | | | 3 | 355 | 0.22 | 2.2 | | | | |
| SVOC | (TIC) DODECANE, 2,6,10-TRIMETHYL- | | | | | 3 | 355 | 0.12 | 2.3 | | | | |
| SVOC | (TIC) DODECANE, 2,6,11-TRIMETHYL- | | | | | 2 | 355 | 0.83 | 5.1 | | | | |
| SVOC | (TIC) DODECANE, 2,7,10-TRIMETHYL- | | | | | 1 | 355 | 0.45 | 0.45 | | | | |
| SVOC | (TIC) DODECANE, 2-METHYL- | | | | | 1 | 355 | 1.7 | 1.7 | | | | |
| SVOC | (TIC) DODECANE, 5-METHYL- | | | | | 1 | 355 | 0.95 | 0.95 | | | | |
| SVOC | (TIC) DODECANOIC ACID | 1 | 356 | 1 | 1 | 1 | 355 | 1.3 | 1.3 | | | | |
| SVOC | (TIC) DODECANOIC ACID, HEXADECYL ESTER | | | | | 1 | 355 | 1.9 | 1.9 | | | | |
| SVOC | (TIC) DODECYL ACRYLATE | | | | | 9 | 355 | 0.098 | 0.71 | | | | |
| SVOC | (TIC) DOTRIACONTANE | | | | | 3 | 355 | 0.11 | 2.6 | | | | |
| SVOC | (TIC) E-15-HEPTADECENAL | 1 | 356 | 0.088 | 0.088 | | | | | | | | |
| SVOC | (TIC) E-7-OCTADECENE | | | | | 1 | 355 | 1.6 | 1.6 | | | | |
| SVOC | (TIC) EICOSANE | 1 | 356 | 0.61 | 0.61 | 40 | 355 | 0.13 | 15 | | | | |
| SVOC | (TIC) EICOSANE, 10-METHYL- | | | | | 2 | 355 | 3 | 11 | | | | |
| SVOC | (TIC) EICOSANE, 2-METHYL- | | | | | 1 | 355 | 1.4 | 1.4 | | | | |
| SVOC | (TIC) EICOSANOIC ACID | 1 | 356 | 0.43 | 0.43 | | | | | | | | |
| SVOC | (TIC) ELEMENE | 1 | 356 | 0.39 | 0.39 | | | | | | | | |
| SVOC | (TIC) EPICHOLESTANOL | 1 | 356 | 0.61 | 0.61 | 8 | 355 | 0.28 | 6 | | | | |
| SVOC | (TIC) EPICOPROSTANOL | | | | | 3 | 355 | 1.9 | 85 | | | | |
| SVOC | (TIC) ERGOST-5-EN-3-OL, (3.BETA | | | | | 17 | 355 | 1.6 | 14 | | | | |
| SVOC | (TIC) ERGOST-5-EN-3-OL, (3.BETA.)- | | | | | 34 | 355 | 0.44 | 10 | | | | |
| SVOC | (TIC) ERGOST-5-EN-3-OL,(3.BETA.)- | 3 | 356 | 0.13 | 0.29 | | | | | | | | |
| SVOC | (TIC) ERGOST-5-EN-3-OL,(3BETA)- | | | | | 1 | 355 | 0.27 | 0.27 | | | | |
| SVOC | (TIC) ERGOST-7-EN-3-OL, (3.BETA.)- | | | | | 5 | 355 | 6.3 | 14 | | | | |
| SVOC | (TIC) ERGOSTANE-3,12-DIOL, (3.A | | | | | 1 | 355 | 9 | 9 | | | | |
| SVOC | (TIC) ERGOSTANOL | 2 | 356 | 0.68 | 3.5 | 37 | 355 | 0.57 | 39 | | | | |
| SVOC | (TIC) ERUCYLAMIDE | 4 | 356 | 0.62 | 1.9 | | | | | | | | |
| SVOC | (TIC) ETHANOL, 2-(HEXADECYLOXY)- | | | | | 1 | 355 | 0.96 | 0.96 | | | | |
| SVOC | (TIC) ETHANOL, 2-(TETRADECYLOXY)- | | | | | 2 | 355 | 2.5 | 4.6 | | | | |
| SVOC | (TIC) ETHANONE,1-(2-HYDROXYPHENYL)- | 2 | 356 | 0.16 | 1.1 | | | | | | | | |
| SVOC | (TIC) ETHANONE,1-(4-HYDROXYPHENYL)- | 1 | 356 | 0.7 | 0.7 | | | | | | | | |
| SVOC | (TIC) ETHYL CITRATE | | | | | | | | | 2 | 33 | 0.0031 | 0.007 |
| SVOC | (TIC) ETHYLDIMETHYLBENZENEISOMER | 1 | 356 | 0.92 | 0.92 | | | | | | | | |

**Table 1 Waterbodies TIC Summary (All Areas)**

| Group | Analyte | Soil 0-2 ft | | | | Sediment 0-0.5 ft | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SVOC | (TIC) ETHYLTRIMETHYLNAPHTHALENEISOMER | 1 | 356 | 0.33 | 0.33 | | | | | | | | |
| SVOC | (TIC) EUCALYPTOL | 3 | 356 | 0.21 | 1.6 | 6 | 355 | 1.1 | 1.4 | | | | |
| SVOC | (TIC) FARNESYL BROMIDE | | | | | 1 | 355 | 8.7 | 8.7 | | | | |
| SVOC | (TIC) FLUORANTHENE, 2-METHYL- | | | | | 1 | 355 | 0.28 | 0.28 | | | | |
| SVOC | (TIC) FORMAMIDE, N-(2-PHENYLETHYL)- | | | | | 1 | 355 | 0.16 | 0.16 | | | | |
| SVOC | (TIC) FORMAMIDE, N,N-DIMETHYL-, FILTERED | | | | | | | | | 3 | 33 | 0.0052 | 0.015 |
| SVOC | (TIC) FRIEDELAN-3-ONE | 9 | 356 | 0.3 | 4.8 | 9 | 355 | 0.87 | 11 | | | | |
| SVOC | (TIC) FRIEDELIN | 4 | 356 | 1 | 8 | | | | | | | | |
| SVOC | (TIC) FRIEDLAN-3-ONE | 1 | 356 | 1 | 1 | | | | | | | | |
| SVOC | (TIC) GAMMA.-SITOSTEROL | | | | | 4 | 355 | 3.1 | 7.5 | | | | |
| SVOC | (TIC) GAMMA-SITOSTEROL | 27 | 356 | 0.095 | 4.2 | 28 | 355 | 0.24 | 70 | | | | |
| SVOC | (TIC) GERMACRENE D | 2 | 356 | 0.55 | 1.2 | | | | | | | | |
| SVOC | (TIC) HENEICOSANE | | | | | 10 | 355 | 0.31 | 15 | | | | |
| SVOC | (TIC) HENEICOSANE, 11-(1-ETHYLPROPYL)- | | | | | 1 | 355 | 4.9 | 4.9 | | | | |
| SVOC | (TIC) HENEICOSANE, 11-DECYL- | | | | | 1 | 355 | 0.74 | 0.74 | | | | |
| SVOC | (TIC) HEPTACOSANE | | | | | 9 | 355 | 0.1 | 2.7 | | | | |
| SVOC | (TIC) HEPTACOSANE, 1-CHLORO- | | | | | 2 | 355 | 0.12 | 0.4 | | | | |
| SVOC | (TIC) HEPTADECANE | | | | | 41 | 355 | 0.098 | 18 | | | | |
| SVOC | (TIC) HEPTADECANE, 2,6,10,15-TETRAMETHYL- | | | | | 3 | 355 | 0.34 | 1.6 | | | | |
| SVOC | (TIC) HEPTADECANE, 2,6-DIMETHYL- | | | | | 1 | 355 | 4.1 | 4.1 | | | | |
| SVOC | (TIC) HEPTADECANE, 2-METHYL- | | | | | 1 | 355 | 1.6 | 1.6 | | | | |
| SVOC | (TIC) HEPTADECANE, 9-HEXYL- | | | | | 1 | 355 | 1.6 | 1.6 | | | | |
| SVOC | (TIC) HEPTADECANE, 9-OCTYL- | | | | | 7 | 355 | 0.88 | 14 | | | | |
| SVOC | (TIC) HEPTADECANOIC ACID | | | | | 1 | 355 | 0.71 | 0.71 | | | | |
| SVOC | (TIC) HEPTAFLUOROBUTYRIC ACID,N-OC | 1 | 356 | 0.8 | 0.8 | | | | | | | | |
| SVOC | (TIC) HEXACOSANE | | | | | 2 | 355 | 0.11 | 2.8 | | | | |
| SVOC | (TIC) HEXACOSANE, 9-OCTYL- | | | | | 1 | 355 | 4.1 | 4.1 | | | | |
| SVOC | (TIC) HEXADECANAL | | | | | 6 | 355 | 0.061 | 2.5 | | | | |
| SVOC | (TIC) HEXADECANAMIDE | 1 | 356 | 0.81 | 0.81 | 10 | 355 | 0.089 | 0.37 | | | | |
| SVOC | (TIC) HEXADECANE | | | | | 23 | 355 | 0.1 | 16 | | | | |
| SVOC | (TIC) HEXADECANE, 1-CHLORO- | | | | | 1 | 355 | 0.21 | 0.21 | | | | |
| SVOC | (TIC) HEXADECANE, 2,6,10,14-TETRAMETHYL- | | | | | 5 | 355 | 0.12 | 0.63 | | | | |
| SVOC | (TIC) HEXADECANE, 2-METHYL- | | | | | 2 | 355 | 0.082 | 1.6 | | | | |
| SVOC | (TIC) HEXADECANE, 7,9-DIMETHYL- | | | | | 1 | 355 | 3.8 | 3.8 | | | | |
| SVOC | (TIC) HEXADECANOIC ACID | 1 | 356 | 1.9 | 1.9 | 69 | 355 | 0.12 | 18 | | | | |
| SVOC | (TIC) HEXADECANOICACID | 18 | 356 | 0.12 | 9.5 | | | | | | | | |
| SVOC | (TIC) HEXADECANOICACID,BUTYLESTER | 5 | 356 | 0.11 | 0.3 | | | | | | | | |
| SVOC | (TIC) HEXADECENOICACID,Z-11- | 1 | 356 | 0.15 | 0.15 | | | | | | | | |
| SVOC | (TIC) HEXADECYL ESTER BROMOACETIC | 1 | 356 | 0.72 | 0.72 | | | | | | | | |
| SVOC | (TIC) HEXAHYDRODIMETHYLNAPHTHALENEISOMER | 1 | 356 | 0.14 | 0.14 | | | | | | | | |
| SVOC | (TIC) HEXANOICACID | 6 | 356 | 0.11 | 1.3 | | | | | | | | |
| SVOC | (TIC) HEXATRIACONTANE | | | | | 17 | 355 | 0.09 | 16 | | | | |

**Table 1 Waterbodies TIC Summary (All Areas)**

| Group | Analyte | Soil 0-2 ft | | | | Sediment 0-0.5 ft | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SVOC | (TIC) HOP-22(29)-EN-3.BETA.-OL | 5 | 356 | 0.43 | 20 | 9 | 355 | 0.17 | 6 | | | | |
| SVOC | (TIC) INDAN, 1-METHYL- | | | | | 1 | 355 | 1.9 | 1.9 | | | | |
| SVOC | (TIC) INDANE | | | | | 2 | 355 | 2.2 | 2.4 | | | | |
| SVOC | (TIC) INDENO(1,2,3-CD)PYRENE | | | | | 1 | 355 | 1.2 | 1.2 | | | | |
| SVOC | (TIC) INDENO[1,2,3-CD]FLUORANTHENE | | | | | 2 | 355 | 1.7 | 14 | | | | |
| SVOC | (TIC) ISOBORNYL ACETATE | | | | | 1 | 355 | 2.4 | 2.4 | | | | |
| SVOC | (TIC) ISOPIMARADIENE | 1 | 356 | 1.1 | 1.1 | | | | | | | | |
| SVOC | (TIC) JUGLON | 1 | 356 | 0.5 | 0.5 | | | | | | | | |
| SVOC | (TIC) JUNIPENE | 1 | 356 | 1 | 1 | | | | | | | | |
| SVOC | (TIC) KAUR-16-ENE, (8.BETA.,13. | | | | | 1 | 355 | 1.6 | 1.6 | | | | |
| SVOC | (TIC) L-.BETA.-PINENE | 1 | 356 | 1.2 | 1.2 | | | | | | | | |
| SVOC | (TIC) LIMONENE | | | | | 1 | 355 | 1 | 1 | | | | |
| SVOC | (TIC) L-LIMONENE | 2 | 356 | 0.3 | 0.44 | | | | | | | | |
| SVOC | (TIC) LONGIFOLENALDEHYDE | | | | | 3 | 355 | 1.1 | 4.3 | | | | |
| SVOC | (TIC) LUP-20(29)-EN-3-ONE | 4 | 356 | 0.14 | 14 | 29 | 355 | 0.52 | 71 | | | | |
| SVOC | (TIC) LUPAN-3-ONE | | | | | 1 | 355 | 0.35 | 0.35 | | | | |
| SVOC | (TIC) LUPEOL | 5 | 356 | 0.26 | 7.6 | 48 | 355 | 0.51 | 53 | | | | |
| SVOC | (TIC) METHYL 3-KETO-BISNORALLOCHOLANATE | | | | | 1 | 355 | 0.35 | 0.35 | | | | |
| SVOC | (TIC) METHYL ISOLITHOCHOLATE | 1 | 356 | 5.3 | 5.3 | | | | | | | | |
| SVOC | (TIC) MYRISTOLEIC ACID | | | | | 1 | 355 | 0.3 | 0.3 | | | | |
| SVOC | (TIC) NAPHTHALENE, 1-(PHENYLMETHYL)- | | | | | 1 | 355 | 1.7 | 1.7 | | | | |
| SVOC | (TIC) NAPHTHALENE, 1,2,3,4,4A,5,6,8A-OCTAHYDRO | 3 | 356 | 0.52 | 0.92 | | | | | | | | |
| SVOC | (TIC) NAPHTHALENE, 1,2,3,4-TETR | | | | | 3 | 355 | 0.92 | 3.8 | | | | |
| SVOC | (TIC) NAPHTHALENE, 1,2,3,4-TETRAHYDRO-1,6-DIME | | | | | 3 | 355 | 0.19 | 3.4 | | | | |
| SVOC | (TIC) NAPHTHALENE, 1,2,3,5,6,7,8,8A-OCTAHYDRO- | | | | | 2 | 355 | 0.9 | 2.6 | | | | |
| SVOC | (TIC) NAPHTHALENE, 1,2,3,5,6,8A | | | | | 1 | 355 | 5.1 | 5.1 | | | | |
| SVOC | (TIC) NAPHTHALENE, 1,2,3,5,6,8A-HEXAHYDRO-4,7- | | | | | 1 | 355 | 1.2 | 1.2 | | | | |
| SVOC | (TIC) NAPHTHALENE, 1,2-DIHYDRO-4-PHENYL- | | | | | 1 | 355 | 0.56 | 0.56 | | | | |
| SVOC | (TIC) NAPHTHALENE, 1,4,6-TRIMETHYL- | | | | | 1 | 355 | 0.18 | 0.18 | | | | |
| SVOC | (TIC) NAPHTHALENE, 1,4-DIMETHYL- | | | | | 1 | 355 | 0.45 | 0.45 | | | | |
| SVOC | (TIC) NAPHTHALENE, 1,6-DIMETHYL-4-(1-METHYLETH | 2 | 356 | 0.6 | 0.79 | | | | | | | | |
| SVOC | (TIC) NAPHTHALENE, 1-METHYL- | | | | | 2 | 355 | 0.17 | 0.62 | | | | |
| SVOC | (TIC) NAPHTHALENE, 2,6-DIMETHYL- | | | | | 2 | 355 | 0.46 | 1.2 | | | | |
| SVOC | (TIC) NAPHTHALENE, 2-PHENYL- | | | | | 10 | 355 | 0.16 | 0.84 | | | | |
| SVOC | (TIC) NAPHTHALENE, DECAHYDRO-, TRANS- | | | | | 4 | 355 | 0.23 | 13 | | | | |
| SVOC | (TIC) NAPHTHALENE, DECAHYDRO-2-METHYL- | | | | | 3 | 355 | 0.38 | 0.7 | | | | |
| SVOC | (TIC) NAPHTHALENE, DECAHYDRO-4A-METHYL-1-METHY | | | | | 1 | 355 | 0.9 | 0.9 | | | | |
| SVOC | (TIC) NAPHTHALENE,1,2,3,4,4A,5,6,8A-OCTAHYDRO | 2 | 356 | 0.12 | 0.66 | | | | | | | | |
| SVOC | (TIC) NAPHTHALENE,1,2,3,5,6,8A-HEXAHYDRO-4,7- | 4 | 356 | 0.19 | 0.35 | | | | | | | | |
| SVOC | (TIC) NAPHTHALENE,1,2,4A,5,6,8A-HEXAHYDRO-4,7 | 4 | 356 | 0.12 | 1.9 | | | | | | | | |
| SVOC | (TIC) NAPHTHALENE,2-PHENYL- | | | | | 1 | 355 | 0.084 | 0.084 | | | | |
| SVOC | (TIC) NAPHTHO[2,1,8,7-KLMN]XANTHENE | | | | | 1 | 355 | 1.2 | 1.2 | | | | |

**Table 1 Waterbodies TIC Summary (All Areas)**

| Group | Analyte | Soil 0-2 ft | | | | Sediment 0-0.5 ft | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SVOC | (TIC) N-HEXADECANOIC ACID | 23 | 356 | 0.13 | 5.2 | 5 | 355 | 0.14 | 1.5 | 9 | 33 | 0.0025 | 0.009 |
| SVOC | (TIC) N-HEXADECANOIC ACID, FILTERED | | | | | | | | | 1 | 33 | 0.0051 | 0.0051 |
| SVOC | (TIC) N-HEXADECANOICACID | 29 | 356 | 0.092 | 1.6 | 1 | 355 | 0.15 | 0.15 | | | | |
| SVOC | (TIC) N-HEXDECANOIC ACID | 1 | 356 | 0.39 | 0.39 | | | | | | | | |
| SVOC | (TIC) NONACOSANE | | | | | 4 | 355 | 0.88 | 11 | | | | |
| SVOC | (TIC) NONADECANE | | | | | 28 | 355 | 0.11 | 30 | | | | |
| SVOC | (TIC) NONADECANE, 1-CHLORO- | | | | | 1 | 355 | 0.8 | 0.8 | | | | |
| SVOC | (TIC) NONADECANE, 2-METHYL- | | | | | 1 | 355 | 0.22 | 0.22 | | | | |
| SVOC | (TIC) NONADECANE, 9-METHYL- | | | | | 1 | 355 | 10 | 10 | | | | |
| SVOC | (TIC) NONYLPHENOLISOMER | | | | | 7 | 355 | 0.48 | 2.3 | | | | |
| SVOC | (TIC) O-(P-(DIMETHYLAMINO)BENZYLIDENEAMINO)PHE | | | | | 1 | 355 | 2 | 2 | | | | |
| SVOC | (TIC) OCTACOSANE | | | | | 10 | 355 | 0.12 | 3.7 | | | | |
| SVOC | (TIC) OCTADECANAL | 4 | 356 | 0.21 | 0.5 | 16 | 355 | 0.13 | 6.4 | | | | |
| SVOC | (TIC) OCTADECANAMIDE | | | | | 2 | 355 | 0.59 | 0.61 | | | | |
| SVOC | (TIC) OCTADECANE | | | | | 17 | 355 | 0.09 | 13 | | | | |
| SVOC | (TIC) OCTADECANE, 1-CHLORO- | | | | | 5 | 355 | 0.74 | 5.9 | | | | |
| SVOC | (TIC) OCTADECANOIC ACID | 1 | 356 | 1.1 | 1.1 | 5 | 355 | 0.65 | 1.7 | 7 | 33 | 0.0028 | 0.013 |
| SVOC | (TIC) OCTADECANOIC ACID, 2-OXO-, METHYL ESTER | | | | | 1 | 355 | 2.4 | 2.4 | | | | |
| SVOC | (TIC) OCTADECANOICACID | 4 | 356 | 0.083 | 0.91 | | | | | | | | |
| SVOC | (TIC) OCTADECANOICACID,2-METHYLPROPYLESTER | 1 | 356 | 0.17 | 0.17 | | | | | | | | |
| SVOC | (TIC) OCTADECANOICACID,BUTYLESTER | 4 | 356 | 0.11 | 0.23 | | | | | | | | |
| SVOC | (TIC) OCTADECYL ESTER BROMOACETIC | 1 | 356 | 0.7 | 0.7 | | | | | | | | |
| SVOC | (TIC) OCTAHYDRONAPHTHALENEISOMER | 1 | 356 | 5.8 | 5.8 | | | | | | | | |
| SVOC | (TIC) OCTANE, 2,3,7-TRIMETHYL- | | | | | 1 | 355 | 3.3 | 3.3 | | | | |
| SVOC | (TIC) OCTANOIC ACID | | | | | | | | | 2 | 33 | 0.0025 | 0.0063 |
| SVOC | (TIC) OCTYLPHENOLISOMER | | | | | 3 | 355 | 0.55 | 0.95 | | | | |
| SVOC | (TIC) OLEAN-12-ENE | 1 | 356 | 1.2 | 1.2 | 7 | 355 | 0.61 | 7.4 | | | | |
| SVOC | (TIC) OLEAN-13(18)-ENE | | | | | 1 | 355 | 4.6 | 4.6 | | | | |
| SVOC | (TIC) OLEAN-18-ENE | | | | | 9 | 355 | 0.97 | 11 | | | | |
| SVOC | (TIC) OLEIC ACID | 1 | 356 | 0.16 | 0.16 | 2 | 355 | 3.4 | 6 | | | | |
| SVOC | (TIC) OLEYL ALCOHOL | | | | | 2 | 355 | 0.72 | 0.91 | | | | |
| SVOC | (TIC) O-TERPHENYL | | | | | 7 | 355 | 0.34 | 8.6 | | | | |
| SVOC | (TIC) OXACYCLOHEPTADECAN-2-ONE | | | | | 1 | 355 | 3.7 | 3.7 | | | | |
| SVOC | (TIC) OXIRANE, [(DODECYLOXY)MET | | | | | 2 | 355 | 4.6 | 10 | | | | |
| SVOC | (TIC) OXIRANE, 2-DECYL-3-(5-METHYLHEXYL)-, CIS | | | | | 1 | 355 | 1.1 | 1.1 | | | | |
| SVOC | (TIC) OXIRANE, 3-ETHYL-2,2-DIMETHYL- | | | | | 1 | 355 | 1.3 | 1.3 | | | | |
| SVOC | (TIC) OXIRANE, HEXADECYL- | 1 | 356 | 12 | 12 | 5 | 355 | 0.56 | 2.5 | | | | |
| SVOC | (TIC) OXIRANE, TETRADECYL- | | | | | 2 | 355 | 1.5 | 4.3 | | | | |
| SVOC | (TIC) OXIRANE, TETRAMETHYL- | | | | | 1 | 355 | 0.85 | 0.85 | | | | |
| SVOC | (TIC) PALMITALDEHYDE, DIISOPROPYL ACETAL | | | | | 2 | 355 | 0.99 | 1.7 | | | | |
| SVOC | (TIC) PENTACOSANE | | | | | 1 | 355 | 1.9 | 1.9 | | | | |
| SVOC | (TIC) PENTADECANAL- | 1 | 356 | 0.19 | 0.19 | 6 | 355 | 0.37 | 2 | | | | |

**Table 1 Waterbodies TIC Summary (All Areas)**

| Group | Analyte | Soil 0-2 ft | | | | Sediment 0-0.5 ft | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SVOC | (TIC) PENTADECANE | | | | | 12 | 355 | 0.26 | 7.1 | | | | |
| SVOC | (TIC) PENTADECANE, 2,6,10,14-TETRAMETHYL- | | | | | 1 | 355 | 0.086 | 0.086 | | | | |
| SVOC | (TIC) PENTADECANE, 7-METHYL- | | | | | 2 | 355 | 0.33 | 0.62 | | | | |
| SVOC | (TIC) PENTADECANE, 8-HEPTYL- | | | | | 1 | 355 | 1.5 | 1.5 | | | | |
| SVOC | (TIC) PENTADECANE, 8-HEXYL- | | | | | 1 | 355 | 14 | 14 | | | | |
| SVOC | (TIC) PENTADECANOIC ACID | | | | | 1 | 355 | 0.29 | 0.29 | | | | |
| SVOC | (TIC) PENTAFLUOROPROPIONIC ACID, UNDECYL ESTER | | | | | 1 | 355 | 1.4 | 1.4 | | | | |
| SVOC | (TIC) PENTANOIC ACID, 2-METHYL- | | | | | 1 | 355 | 0.36 | 0.36 | | | | |
| SVOC | (TIC) PENTATRIACONTANE | | | | | 4 | 355 | 0.71 | 8.7 | | | | |
| SVOC | (TIC) PERYLENE | | | | | 52 | 355 | 0.14 | 29 | | | | |
| SVOC | (TIC) PHENANTHRENE, 1,2,3,4,4A,9,10,10A-OCTAHY | | | | | 1 | 355 | 2.4 | 2.4 | | | | |
| SVOC | (TIC) PHENANTHRENE, 1-METHYL- | | | | | 3 | 355 | 0.16 | 0.62 | | | | |
| SVOC | (TIC) PHENANTHRENE, 1-METHYL-7- | | | | | 3 | 355 | 2.9 | 3.8 | | | | |
| SVOC | (TIC) PHENANTHRENE, 1-METHYL-7-(1-METHYLETHYL) | | | | | 9 | 355 | 0.2 | 8.9 | | | | |
| SVOC | (TIC) PHENANTHRENE, 2,3-DIMETHYL- | | | | | 1 | 355 | 0.98 | 0.98 | | | | |
| SVOC | (TIC) PHENANTHRENE, 2,4,5,7-TET | | | | | 5 | 355 | 1.5 | 26 | | | | |
| SVOC | (TIC) PHENANTHRENE, 2,4,5,7-TETRAMETHYL- | | | | | 7 | 355 | 0.37 | 48 | | | | |
| SVOC | (TIC) PHENANTHRENE, 2,5-DIMETHYL- | | | | | 5 | 355 | 0.14 | 1.1 | | | | |
| SVOC | (TIC) PHENANTHRENE, 2,7-DIMETHYL- | | | | | 1 | 355 | 0.65 | 0.65 | | | | |
| SVOC | (TIC) PHENANTHRENE, 2-DODECYLTETRADECAHYDRO- | | | | | 1 | 355 | 0.46 | 0.46 | | | | |
| SVOC | (TIC) PHENANTHRENE, 2-METHYL- | | | | | 9 | 355 | 0.14 | 9 | | | | |
| SVOC | (TIC) PHENANTHRENE, 3,4,5,6-TETRAMETHYL- | | | | | 3 | 355 | 0.43 | 1.2 | | | | |
| SVOC | (TIC) PHENANTHRENE, 3,6-DIMETHYL- | | | | | 4 | 355 | 0.27 | 0.89 | | | | |
| SVOC | (TIC) PHENANTHRENE, 3-METHYL- | | | | | 8 | 355 | 0.1 | 0.92 | | | | |
| SVOC | (TIC) PHENANTHRENE, 4-METHOXY- | | | | | 1 | 355 | 0.46 | 0.46 | | | | |
| SVOC | (TIC) PHENANTHRENE, 4-METHYL- | | | | | 3 | 355 | 0.36 | 1.6 | | | | |
| SVOC | (TIC) PHENANTHRENE,1-METHYL-7-(1-METHYLETHYL) | | | | | 4 | 355 | 0.33 | 2.7 | | | | |
| SVOC | (TIC) PHENANTHRENE,2,5-DIMETHYL- | 1 | 356 | 1 | 1 | | | | | | | | |
| SVOC | (TIC) PHENOL, 2,4-BIS(1,1-DIMETHYLET, FILTERED | | | | | | | | | 2 | 33 | 0.003 | 0.0039 |
| SVOC | (TIC) PHENOL, 4-(1,1,3,3-TETRAM | | | | | 1 | 355 | 2.5 | 2.5 | | | | |
| SVOC | (TIC) PHENOL, 4-(1,1,3,3-TETRAMETHYLBUTYL)- | | | | | 10 | 355 | 0.16 | 7.9 | | | | |
| SVOC | (TIC) PHENOL, 4-(1,1-DIMETHYLPROPYL)- | | | | | 2 | 355 | 0.33 | 1.6 | | | | |
| SVOC | (TIC) PHENOL, 4-(2,2,3,3-TETRAMETHYLBUTYL)- | | | | | 4 | 355 | 0.57 | 3.9 | | | | |
| SVOC | (TIC) PHENOL, 4-(2,2,4-TRIMETHY | | | | | 1 | 355 | 49 | 49 | | | | |
| SVOC | (TIC) PHENOL, 4-(2,2,4-TRIMETHYLPENTYL)- | | | | | 7 | 355 | 0.62 | 16 | | | | |
| SVOC | (TIC) PHENOL, 4,4-(1-METHYLETHYLIDENE)BIS | | | | | 1 | 355 | 0.42 | 0.42 | | | | |
| SVOC | (TIC) PHENOL, 4,4-(1-METHYLETHYLIDENE)BIS- | | | | | 2 | 355 | 0.37 | 1.8 | | | | |
| SVOC | (TIC) PHENOL, M-TERT-BUTYL- | | | | | 1 | 355 | 14 | 14 | | | | |
| SVOC | (TIC) PHENOL, NONYL- | | | | | 19 | 355 | 0.36 | 80 | | | | |
| SVOC | (TIC) PHENOL, P-TERT-BUTYL- | | | | | 6 | 355 | 5.5 | 24 | | | | |
| SVOC | (TIC) PHENOL,2,2-METHYLENEBIS(6-(1,1-DIMETHY) | 1 | 356 | 0.43 | 0.43 | | | | | | | | |
| SVOC | (TIC) PHENOL,2,6-DIMETHOXY-4-(2-PROPENYL)- | 1 | 356 | 0.63 | 0.63 | | | | | | | | |

**Table 1 Waterbodies TIC Summary (All Areas)**

| Group | Analyte | Soil 0-2 ft | | | | Sediment 0-0.5 ft | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SVOC | (TIC) PHENOL,4-(2-PROPENYL)- | 4 | 356 | 0.22 | 0.97 | | | | | | | | |
| SVOC | (TIC) PHENOL,4-METHYL- | 1 | 356 | 1.3 | 1.3 | | | | | | | | |
| SVOC | (TIC) PHOSPHONIC ACID, DIOCTADE | | | | | 1 | 355 | 1.2 | 1.2 | | | | |
| SVOC | (TIC) PHOSPHONIC ACID, DIOCTADECYL ESTER | | | | | 1 | 355 | 1.6 | 1.6 | | | | |
| SVOC | (TIC) PHTHALIC ACID, BIS(7-METHYLOCTYL) ESTER | | | | | | | | | 1 | 33 | 0.12 | 0.12 |
| SVOC | (TIC) PHTHALIC ACID, DECYL ISOBUTYL ESTER | | | | | 1 | 355 | 0.16 | 0.16 | | | | |
| SVOC | (TIC) PHTHALIC ACID, ISOHEXYL PENTYL ESTER | | | | | 1 | 355 | 0.68 | 0.68 | | | | |
| SVOC | (TIC) PHYTOL | | | | | 4 | 355 | 0.82 | 3.2 | | | | |
| SVOC | (TIC) PICEIN | | | | | 1 | 355 | 0.73 | 0.73 | | | | |
| SVOC | (TIC) PREGN-4-ENE-3,20-DIONE, (9.BETA.,10.ALPH | | | | | 1 | 355 | 4.4 | 4.4 | | | | |
| SVOC | (TIC) PREGNAN-18-OL, (5.ALPHA.)- | | | | | 1 | 355 | 1.7 | 1.7 | | | | |
| SVOC | (TIC) PREGNAN-20-ONE, 3-(ACETYL | | | | | 1 | 355 | 11 | 11 | | | | |
| SVOC | (TIC) PREGNAN-20-ONE, 3-(ACETYLOXY)-, (3.ALPHA | | | | | 1 | 355 | 0.6 | 0.6 | | | | |
| SVOC | (TIC) PREGNAN-3.ALPHA.-OL-20-ON | | | | | 1 | 355 | 6.8 | 6.8 | | | | |
| SVOC | (TIC) PREGNAN-3-ONE, (5.ALPHA.)- | | | | | 2 | 355 | 0.18 | 1 | | | | |
| SVOC | (TIC) PROPANEDIOIC ACID, PHENYL | | | | | 1 | 355 | 1.6 | 1.6 | | | | |
| SVOC | (TIC) PROPANOICACID,3-MERCAPTO-,DODECYLEST | 13 | 356 | 0.13 | 2.2 | | | | | | | | |
| SVOC | (TIC) PYRENE, 1,3-DIMETHYL- | | | | | 1 | 355 | 1.9 | 1.9 | | | | |
| SVOC | (TIC) PYRENE, 1-METHYL- | | | | | 10 | 355 | 0.12 | 9.8 | | | | |
| SVOC | (TIC) PYRENE, 2-METHYL- | | | | | 12 | 355 | 0.15 | 2 | | | | |
| SVOC | (TIC) PYRENE, 4-METHYL- | | | | | 4 | 355 | 0.9 | 8 | | | | |
| SVOC | (TIC) PYRIDINE, 3-(PHENYLMETHYL)- | | | | | 1 | 355 | 0.88 | 0.88 | | | | |
| SVOC | (TIC) SELINA-6-EN-4-OL | 1 | 356 | 0.96 | 0.96 | | | | | | | | |
| SVOC | (TIC) SESQUIROSEFURAN | | | | | 2 | 355 | 9.6 | 27 | | | | |
| SVOC | (TIC) SIGMAST-4-EN-3-ONE | 1 | 356 | 2.2 | 2.2 | | | | | | | | |
| SVOC | (TIC) SITOSTEROL DERIVATIVE | 1 | 356 | 1.7 | 1.7 | | | | | | | | |
| SVOC | (TIC) SQUALENE | 4 | 356 | 0.56 | 2.6 | 1 | 355 | 1.3 | 1.3 | | | | |
| SVOC | (TIC) STIGMAST-4-EN-30ONE | 1 | 356 | 0.33 | 0.33 | | | | | | | | |
| SVOC | (TIC) STIGMAST-4-EN-3ONE | 1 | 356 | 0.39 | 0.39 | | | | | | | | |
| SVOC | (TIC) STIGMAST-4-EN-3-ONE | 76 | 356 | 0.12 | 33 | 90 | 355 | 0.16 | 18 | | | | |
| SVOC | (TIC) STIGMAST-4-EN-ONE | 1 | 356 | 1.6 | 1.6 | | | | | | | | |
| SVOC | (TIC) STIGMAST-7-EN-3-OL, (3.BETA.,5.ALPHA.,24 | | | | | 1 | 355 | 0.38 | 0.38 | | | | |
| SVOC | (TIC) STIGMASTANOL | 10 | 356 | 0.96 | 10 | 1 | 355 | 2.8 | 2.8 | | | | |
| SVOC | (TIC) STIGMASTEROL | 43 | 356 | 0.18 | 14 | 101 | 355 | 0.3 | 24 | | | | |
| SVOC | (TIC) STIGMASTEROL, 22,23-DIHYDRO- | 3 | 356 | 1.1 | 2.1 | 1 | 355 | 3.3 | 3.3 | | | | |
| SVOC | (TIC) STIGMASTEROL,22,23-DIHYDRO- | 4 | 356 | 0.2 | 4.5 | | | | | | | | |
| SVOC | (TIC) STIMAST-4-EN-3-ONE | 3 | 356 | 0.68 | 1.9 | | | | | | | | |
| SVOC | (TIC) STIMASTEROL | 1 | 356 | 0.83 | 0.83 | | | | | | | | |
| SVOC | (TIC) SULFUR | | | | | 2 | 355 | 0.46 | 12 | | | | |
| SVOC | (TIC) SULFUR, MOL. (S8) | | | | | 31 | 355 | 0.1 | 26 | | | | |
| SVOC | (TIC) SULFUROUS ACID, 2-ETHYLHEXYL HEXADECYLE | | | | | 1 | 355 | 0.24 | 0.24 | | | | |
| SVOC | (TIC) SULFUROUS ACID, 2-ETHYLHEXYL PENTYL ESTE | | | | | 1 | 355 | 0.37 | 0.37 | | | | |

**Table 1 Waterbodies TIC Summary (All Areas)**

| Group | Analyte | Soil 0-2 ft | | | | Sediment 0-0.5 ft | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SVOC | (TIC) SUSPECTED ALDOL COND PROCUCT | 1 | 356 | 19 | 19 | | | | | | | | |
| SVOC | (TIC) SUSPECTED ALDOL COND PRODUCT | 59 | 356 | 0.32 | 60 | | | | | | | | |
| SVOC | (TIC) SUSPECTED ALDOL COND.PRODUCT | 13 | 356 | 8 | 58 | | | | | | | | |
| SVOC | (TIC) TARAXASTEROL | | | | | 6 | 355 | 2.8 | 7.1 | | | | |
| SVOC | (TIC) TARAXEROL | | | | | 72 | 355 | 0.37 | 31 | | | | |
| SVOC | (TIC) TESTOSTERONE | 4 | 356 | 0.25 | 4.1 | 11 | 355 | 0.46 | 6.7 | | | | |
| SVOC | (TIC) TESTOSTERONE CYPIONATE | 1 | 356 | 1.7 | 1.7 | | | | | | | | |
| SVOC | (TIC) TETRACONTANE, 3,5,24-TRIMETHYL- | | | | | 1 | 355 | 0.57 | 0.57 | | | | |
| SVOC | (TIC) TETRACOSANE | | | | | 9 | 355 | 0.49 | 14 | | | | |
| SVOC | (TIC) TETRACOSANE, 11-DECYL- | | | | | 2 | 355 | 0.34 | 0.49 | | | | |
| SVOC | (TIC) TETRACOSANOIC ACID | 9 | 356 | 0.42 | 2 | | | | | | | | |
| SVOC | (TIC) TETRADECANAL | | | | | 2 | 355 | 1 | 1.2 | | | | |
| SVOC | (TIC) TETRADECANAMIDE | | | | | 3 | 355 | 0.14 | 0.8 | | | | |
| SVOC | (TIC) TETRADECANE | | | | | 9 | 355 | 0.15 | 4.9 | | | | |
| SVOC | (TIC) TETRADECANE, 1-CHLORO- | | | | | 3 | 355 | 0.18 | 3.5 | | | | |
| SVOC | (TIC) TETRADECANE, 2,2-DIMETHYL- | | | | | 1 | 355 | 2.9 | 2.9 | | | | |
| SVOC | (TIC) TETRADECANE, 2,6,10-TRIMETHYL- | | | | | 2 | 355 | 0.36 | 1.7 | | | | |
| SVOC | (TIC) TETRADECANE, 2-METHYL- | | | | | 1 | 355 | 5.3 | 5.3 | | | | |
| SVOC | (TIC) TETRADECANE, 3-METHYL- | | | | | 1 | 355 | 6.9 | 6.9 | | | | |
| SVOC | (TIC) TETRADECANE, 4-METHYL- | | | | | 1 | 355 | 3.7 | 3.7 | | | | |
| SVOC | (TIC) TETRADECANOIC ACID | | | | | 10 | 355 | 0.87 | 4.5 | | | | |
| SVOC | (TIC) TETRADECANOIC ACID, HEXADECYL ESTER | | | | | 2 | 355 | 0.78 | 13 | | | | |
| SVOC | (TIC) TETRADECANOICACID | 1 | 356 | 0.25 | 0.25 | | | | | | | | |
| SVOC | (TIC) TETRAHYDROABIETIC ACID | | | | | 2 | 355 | 0.92 | 1 | | | | |
| SVOC | (TIC) TETRAHYDRODIMETHYLNAPHTHALENEISOMER | 2 | 356 | 0.3 | 13 | | | | | | | | |
| SVOC | (TIC) TETRATETRACONTANE | | | | | 16 | 355 | 0.23 | 8.1 | | | | |
| SVOC | (TIC) TETRATRIACONTANE | | | | | 5 | 355 | 0.25 | 1.2 | 1 | 33 | 0.002 | 0.002 |
| SVOC | (TIC) TOTAL ALKANES | | | | | | | | | 6 | 33 | 1.1E-07 | 0.0058 |
| SVOC | (TIC) TOTAL ALKANES, FILTERED | | | | | | | | | 4 | 33 | 0.0022 | 0.0026 |
| SVOC | (TIC) TRANS-1,10-DIMETHYL-TRANS-9-DECALOL | | | | | 1 | 355 | 0.55 | 0.55 | | | | |
| SVOC | (TIC) TRANS-CARYOPHYLLENE | 13 | 356 | 0.57 | 18 | | | | | | | | |
| SVOC | (TIC) TRANS-DECALIN, 2-METHYL- | | | | | 1 | 355 | 0.64 | 0.64 | | | | |
| SVOC | (TIC) TRIALLYLMETHYLSILANE | | | | | 1 | 355 | 0.48 | 0.48 | | | | |
| SVOC | (TIC) TRICHLOROACETIC ACID, HEXADECYL ESTER | | | | | 2 | 355 | 0.15 | 5.7 | | | | |
| SVOC | (TIC) TRICOSANE | | | | | 10 | 355 | 0.2 | 14 | | | | |
| SVOC | (TIC) TRICOSANOIC ACID | 2 | 356 | 0.4 | 1.2 | | | | | | | | |
| SVOC | (TIC) TRICYCLO[2.2.1.02,6]HEPTA | | | | | 1 | 355 | 1.1 | 1.1 | | | | |
| SVOC | (TIC) TRICYCLO[3.3.1.13,7]DECANE, 1-NITRO- | | | | | 1 | 355 | 0.17 | 0.17 | | | | |
| SVOC | (TIC) TRICYCLO[4.3.0.07,9]NONANE, 2,2,5,5,8,8- | | | | | 2 | 355 | 3.9 | 8.6 | | | | |
| SVOC | (TIC) TRIDECANE | | | | | 2 | 355 | 5.6 | 14 | | | | |
| SVOC | (TIC) TRIDECANE, 1-IODO- | | | | | 1 | 355 | 0.39 | 0.39 | | | | |
| SVOC | (TIC) TRIDECANE, 3-METHYL- | | | | | 4 | 355 | 0.57 | 5.5 | | | | |

**Table 1 Waterbodies TIC Summary (All Areas)**

| Group | Analyte | Soil 0-2 ft | | | | Sediment 0-0.5 ft | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SVOC | (TIC) TRIDECANE, 5-PROPYL- | | | | | 1 | 355 | 0.21 | 0.21 | | | | |
| SVOC | (TIC) TRIDECANE, 6-PROPYL- | | | | | 1 | 355 | 11 | 11 | | | | |
| SVOC | (TIC) TRIDECANOIC ACID | | | | | 1 | 355 | 2.9 | 2.9 | | | | |
| SVOC | (TIC) TRIDECANOICACID | 2 | 356 | 0.55 | 0.77 | | | | | | | | |
| SVOC | (TIC) TRIMETHYLBENZENEISOMER/UNKNOWN | | | | | 1 | 355 | 1.1 | 1.1 | | | | |
| SVOC | (TIC) TRIPHENYLENE, 2-METHYL- | | | | | 3 | 355 | 0.38 | 1.1 | | | | |
| SVOC | (TIC) TRITETRACONTANE | | | | | 9 | 355 | 1.2 | 10 | | | | |
| SVOC | (TIC) UNDECANE, 3,8-DIMETHYL- | | | | | 2 | 355 | 0.84 | 2 | | | | |
| SVOC | (TIC) UNDECANE, 4,6-DIMETHYL- | | | | | 1 | 355 | 1.6 | 1.6 | | | | |
| SVOC | (TIC) UNKNOWN | 354 | 356 | 0.14 | 340 | 352 | 355 | 0.091 | 98 | 24 | 33 | 0 | 0.027 |
| SVOC | (TIC) UNKNOWN ACETATE DERIVATIVE | 5 | 356 | 0.54 | 1.9 | | | | | | | | |
| SVOC | (TIC) UNKNOWN ACETIC ACID | 1 | 356 | 5.2 | 5.2 | | | | | | | | |
| SVOC | (TIC) UNKNOWN ACID | 20 | 356 | 0.23 | 6.5 | | | | | | | | |
| SVOC | (TIC) UNKNOWN ALCOHOL | 5 | 356 | 0.23 | 0.74 | 163 | 355 | 0.081 | 73 | | | | |
| SVOC | (TIC) UNKNOWN ALDEHYDE | 2 | 356 | 0.48 | 4.8 | | | | | | | | |
| SVOC | (TIC) UNKNOWN ALDOL CONDENSATE | 49 | 356 | 0.78 | 5.8 | | | | | | | | |
| SVOC | (TIC) UNKNOWN ALIPHATIC ACID | | | | | 3 | 355 | 0.22 | 4.9 | | | | |
| SVOC | (TIC) UNKNOWN ALIPHATIC ALDEHYDE | | | | | 48 | 355 | 0.25 | 12 | | | | |
| SVOC | (TIC) UNKNOWN ALIPHATIC COMPOUND | | | | | 160 | 355 | 0.1 | 14 | | | | |
| SVOC | (TIC) UNKNOWN ALIPHATIC ESTER | | | | | 2 | 355 | 0.86 | 2.7 | | | | |
| SVOC | (TIC) UNKNOWN ALIPHATIC KETONE | | | | | 90 | 355 | 0.18 | 12 | | | | |
| SVOC | (TIC) UNKNOWN ALKANE | 40 | 356 | 0.11 | 12 | 233 | 355 | 0.12 | 200 | 1 | 33 | 0.0034 | 0.0034 |
| SVOC | (TIC) UNKNOWN ALKANE DERIVATIVE | 2 | 356 | 0.59 | 8.9 | | | | | | | | |
| SVOC | (TIC) UNKNOWN ALKENE | 11 | 356 | 0.25 | 6.5 | 53 | 355 | 0.15 | 120 | | | | |
| SVOC | (TIC) UNKNOWN ALKYLBENZENE | | | | | 1 | 355 | 2 | 2 | | | | |
| SVOC | (TIC) UNKNOWN ALKYLCYCLOHEXANE | | | | | 2 | 355 | 0.13 | 2.5 | | | | |
| SVOC | (TIC) UNKNOWN ALKYLPHENOL | | | | | 4 | 355 | 1.1 | 2.4 | | | | |
| SVOC | (TIC) UNKNOWN ALKYNE | 5 | 356 | 0.35 | 0.76 | | | | | | | | |
| SVOC | (TIC) UNKNOWN AMID | 1 | 356 | 0.5 | 0.5 | | | | | | | | |
| SVOC | (TIC) UNKNOWN AMIDE | 27 | 356 | 0.14 | 1.3 | 4 | 355 | 0.25 | 1.3 | | | | |
| SVOC | (TIC) UNKNOWN AMINE | 4 | 356 | 0.48 | 1.5 | 3 | 355 | 2.5 | 3.1 | | | | |
| SVOC | (TIC) UNKNOWN AMYRIN ISOMER | 2 | 356 | 2.1 | 3.9 | | | | | | | | |
| SVOC | (TIC) UNKNOWN AROMATIC AMINE | | | | | 1 | 355 | 1.1 | 1.1 | | | | |
| SVOC | (TIC) UNKNOWN AROMATIC COMPOUND | | | | | 10 | 355 | 0.34 | 14 | | | | |
| SVOC | (TIC) UNKNOWN AZULENE DERIVATIVE | 1 | 356 | 0.93 | 0.93 | | | | | | | | |
| SVOC | (TIC) UNKNOWN BENZALDEHYDE DERIVAT | 1 | 356 | 0.25 | 0.25 | | | | | | | | |
| SVOC | (TIC) UNKNOWN BENZENAMINE DERIVATI | 1 | 356 | 2.2 | 2.2 | | | | | | | | |
| SVOC | (TIC) UNKNOWN BENZENE DERIVATIVE | 6 | 356 | 0.15 | 5.4 | 11 | 355 | 0.098 | 19 | | | | |
| SVOC | (TIC) UNKNOWN BENZODIOXOLE DERIVAT | 1 | 356 | 5.3 | 5.3 | | | | | | | | |
| SVOC | (TIC) UNKNOWN BENZOFLUORANTHENE | | | | | 7 | 355 | 0.32 | 3.6 | | | | |
| SVOC | (TIC) UNKNOWN BENZOFLUORENE | | | | | 3 | 355 | 0.46 | 1.6 | | | | |
| SVOC | (TIC) UNKNOWN BIPHENYL | 1 | 356 | 1.9 | 1.9 | | | | | | | | |

**Table 1 Waterbodies TIC Summary (All Areas)**

| Group | Analyte | Soil 0-2 ft | | | | Sediment 0-0.5 ft | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SVOC | (TIC) UNKNOWN BRANCHED ALKANE | 14 | 356 | 0.083 | 5.4 | | | | | | | | |
| SVOC | (TIC) UNKNOWN BUTANE | 3 | 356 | 1.8 | 4.2 | | | | | | | | |
| SVOC | (TIC) UNKNOWN C4-ALKYLBENZENE | | | | | 2 | 355 | 0.58 | 56 | | | | |
| SVOC | (TIC) UNKNOWN CARBOXALDEHYDE DERIV | 1 | 356 | 1 | 1 | | | | | | | | |
| SVOC | (TIC) UNKNOWN CHOLATE DERIVATIVE | 1 | 356 | 1.7 | 1.7 | | | | | | | | |
| SVOC | (TIC) UNKNOWN CHOLESTAN DERIVATIVE | 3 | 356 | 5 | 84 | | | | | | | | |
| SVOC | (TIC) UNKNOWN CHOLESTANE DERIVATIV | 4 | 356 | 0.54 | 6.7 | | | | | | | | |
| SVOC | (TIC) UNKNOWN CHOLESTANE DERIVATIVE | | | | | 5 | 355 | 0.64 | 20 | | | | |
| SVOC | (TIC) UNKNOWN CHOLESTANOL DERIVATI | 1 | 356 | 0.92 | 0.92 | | | | | | | | |
| SVOC | (TIC) UNKNOWN COSANONE | 1 | 356 | 2 | 2 | | | | | | | | |
| SVOC | (TIC) UNKNOWN CYCLOALKANE | 22 | 356 | 0.15 | 8.2 | 46 | 355 | 0.08 | 11 | | | | |
| SVOC | (TIC) UNKNOWN CYCLOHEXANE DERIVATI | 5 | 356 | 0.38 | 1.7 | | | | | | | | |
| SVOC | (TIC) UNKNOWN DECAHYDRONAPHTHALENE | | | | | 1 | 355 | 0.46 | 0.46 | | | | |
| SVOC | (TIC) UNKNOWN DECANAL | 8 | 356 | 0.15 | 3.4 | | | | | | | | |
| SVOC | (TIC) UNKNOWN DECENAL | 4 | 356 | 0.26 | 5 | | | | | | | | |
| SVOC | (TIC) UNKNOWN DIENE | 6 | 356 | 0.12 | 2 | | | | | | | | |
| SVOC | (TIC) UNKNOWN DIONE | 3 | 356 | 0.23 | 2.9 | | | | | | | | |
| SVOC | (TIC) UNKNOWN EICOSENE | 1 | 356 | 2.8 | 2.8 | | | | | | | | |
| SVOC | (TIC) UNKNOWN GUANIDINE DERIVATIVE | 1 | 356 | 0.13 | 0.13 | | | | | | | | |
| SVOC | (TIC) UNKNOWN HYDOCARBON | 1 | 356 | 0.12 | 0.12 | | | | | | | | |
| SVOC | (TIC) UNKNOWN HYDROCARBON | 32 | 356 | 0.084 | 9.2 | | | | | | | | |
| SVOC | (TIC) UNKNOWN INDENE DERIVATIVE | 2 | 356 | 0.48 | 4.4 | | | | | | | | |
| SVOC | (TIC) UNKNOWN KETONE | 2 | 356 | 0.75 | 1.3 | 1 | 355 | 1.3 | 1.3 | | | | |
| SVOC | (TIC) UNKNOWN METHANONE DERIVATIVE | 2 | 356 | 0.52 | 14 | | | | | | | | |
| SVOC | (TIC) UNKNOWN NAPHTHALENE | 3 | 356 | 1.2 | 1.8 | | | | | | | | |
| SVOC | (TIC) UNKNOWN NAPHTHALENE DERIV | | | | | 1 | 355 | 9.7 | 9.7 | | | | |
| SVOC | (TIC) UNKNOWN NAPHTHALENE DERIVATI | 9 | 356 | 0.22 | 3.5 | | | | | | | | |
| SVOC | (TIC) UNKNOWN NAPHTHALENE DERIVATIVE | | | | | 6 | 355 | 0.37 | 3.6 | | | | |
| SVOC | (TIC) UNKNOWN NITRILE DERIVATIVE | 1 | 356 | 0.49 | 0.49 | | | | | | | | |
| SVOC | (TIC) UNKNOWN ORGANIC ACID | 11 | 356 | 0.085 | 2.4 | | | | | | | | |
| SVOC | (TIC) UNKNOWN OXIRANE | 24 | 356 | 0.22 | 28 | 4 | 355 | 0.43 | 2.3 | | | | |
| SVOC | (TIC) UNKNOWN OXIRANE DERIVATIVE | 2 | 356 | 0.32 | 0.91 | | | | | | | | |
| SVOC | (TIC) UNKNOWN PAH | 44 | 356 | 0.093 | 9.9 | 42 | 355 | 0.21 | 14 | | | | |
| SVOC | (TIC) UNKNOWN PAH DERIVATIVE | 14 | 356 | 0.15 | 1.8 | | | | | | | | |
| SVOC | (TIC) UNKNOWN PHENOL | 1 | 356 | 0.38 | 0.38 | 1 | 355 | 0.35 | 0.35 | | | | |
| SVOC | (TIC) UNKNOWN PHENOL DERIVATIVE | 3 | 356 | 0.99 | 2.8 | 1 | 355 | 3.4 | 3.4 | | | | |
| SVOC | (TIC) UNKNOWN PHOSPHINE | 1 | 356 | 0.098 | 0.098 | | | | | | | | |
| SVOC | (TIC) UNKNOWN PHTHALATE | | | | | 1 | 355 | 0.32 | 0.32 | | | | |
| SVOC | (TIC) UNKNOWN POLYCYCLIC HYDROCARBON | | | | | 67 | 355 | 0.21 | 14 | | | | |
| SVOC | (TIC) UNKNOWN POLYTERPENE DERIVATIVE | | | | | 258 | 355 | 0.18 | 75 | | | | |
| SVOC | (TIC) UNKNOWN PROPANOL DERIVATIVE | 4 | 356 | 0.2 | 0.94 | | | | | | | | |
| SVOC | (TIC) UNKNOWN QUINOLINE DERIVATIVE | 1 | 356 | 0.14 | 0.14 | | | | | | | | |

**Table 1 Waterbodies TIC Summary (All Areas)**

| Group | Analyte | Soil 0-2 ft | | | | Sediment 0-0.5 ft | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SVOC | (TIC) UNKNOWN SITOSTEROL DERIVATIV | 3 | 356 | 0.36 | 8.8 | | | | | | | | |
| SVOC | (TIC) UNKNOWN SITOSTEROL ISOMER | 21 | 356 | 0.28 | 17 | | | | | | | | |
| SVOC | (TIC) UNKNOWN STERANE DERIVATIVE | | | | | 39 | 355 | 0.23 | 29 | | | | |
| SVOC | (TIC) UNKNOWN STEROL | 7 | 356 | 0.36 | 10 | | | | | | | | |
| SVOC | (TIC) UNKNOWN STEROL DERIVATIVE | 2 | 356 | 0.33 | 1.6 | | | | | | | | |
| SVOC | (TIC) UNKNOWN STIGMASTEROL DERIVAT | 4 | 356 | 0.96 | 3.6 | | | | | | | | |
| SVOC | (TIC) UNKNOWN STRAIGHT CHAIN ALKANE | 62 | 356 | 0.19 | 24 | | | | | | | | |
| SVOC | (TIC) UNKNOWN SUBSTITUTED BENZENE | | | | | 1 | 355 | 3.2 | 3.2 | | | | |
| SVOC | (TIC) UNKNOWN SUBSTITUTED BENZODIOXOLE | 1 | 356 | 0.46 | 0.46 | | | | | | | | |
| SVOC | (TIC) UNKNOWN SUBSTITUTED COSANONE | 1 | 356 | 3.6 | 3.6 | | | | | | | | |
| SVOC | (TIC) UNKNOWN SUBSTITUTED NAPTHALENE | 1 | 356 | 0.29 | 0.29 | | | | | | | | |
| SVOC | (TIC) UNKNOWN SUBSTITUTED OXIRANE | 1 | 356 | 0.65 | 0.65 | | | | | | | | |
| SVOC | (TIC) UNKNOWN SUBSTITUTED PHENOL | 1 | 356 | 0.23 | 0.23 | | | | | | | | |
| SVOC | (TIC) UNKNOWN SUBSTITUTED PROPENE | 1 | 356 | 0.12 | 0.12 | | | | | | | | |
| SVOC | (TIC) UNKNOWN SUBSTITUTED THIOPHENE | 1 | 356 | 0.23 | 0.23 | | | | | | | | |
| SVOC | (TIC) UNKNOWN TERPENE | | | | | 1 | 355 | 0.35 | 0.35 | | | | |
| SVOC | (TIC) UNKNOWN THIOL | 1 | 356 | 0.22 | 0.22 | | | | | | | | |
| SVOC | (TIC) UNKNOWN TRIENE | 1 | 356 | 1.7 | 1.7 | | | | | | | | |
| SVOC | (TIC) UNKNOWNADIPATE | 1 | 356 | 0.32 | 0.32 | | | | | | | | |
| SVOC | (TIC) UNKNOWNALDEHYDE | 8 | 356 | 0.17 | 1.7 | 1 | 355 | 8.2 | 8.2 | | | | |
| SVOC | (TIC) UNKNOWNALDOLCONDENSATE | 191 | 356 | 1.7 | 83 | 33 | 355 | 1.6 | 17 | | | | |
| SVOC | (TIC) UNKNOWNALKANE | 181 | 356 | 0.14 | 52 | 38 | 355 | 0.13 | 10 | | | | |
| SVOC | (TIC) UNKNOWNALKANE/C20H12PAH | 1 | 356 | 0.87 | 0.87 | | | | | | | | |
| SVOC | (TIC) UNKNOWNALKANE/UNKNOWN | 6 | 356 | 0.16 | 0.57 | | | | | | | | |
| SVOC | (TIC) UNKNOWNALKENE | 21 | 356 | 0.11 | 6.8 | 13 | 355 | 0.22 | 2.2 | | | | |
| SVOC | (TIC) UNKNOWNAMIDE | 14 | 356 | 0.086 | 0.28 | 1 | 355 | 2.7 | 2.7 | | | | |
| SVOC | (TIC) UNKNOWNCHLORINATEDCOMPOUND | | | | | | | | | 2 | 33 | 0.002 | 0.015 |
| SVOC | (TIC) UNKNOWNCYCLOALKANE | 5 | 356 | 0.3 | 2.8 | | | | | | | | |
| SVOC | (TIC) UNKNOWNMETHYLESTER | 1 | 356 | 0.52 | 0.52 | | | | | | | | |
| SVOC | (TIC) UNKNOWNORGANICACID | 5 | 356 | 0.11 | 0.63 | | | | | | | | |
| SVOC | (TIC) UNKNOWNPHTHALATE | 3 | 356 | 0.11 | 1 | 17 | 355 | 0.091 | 1 | | | | |
| SVOC | (TIC) UNKNOWNSILOXANE | 4 | 356 | 0.13 | 0.27 | 9 | 355 | 0.17 | 1.4 | | | | |
| SVOC | (TIC) UNKNOWNSTEROL | 91 | 356 | 0.11 | 45 | 14 | 355 | 0.11 | 15 | | | | |
| SVOC | (TIC) UNKNWON ACID | 44 | 356 | 0.14 | 4.1 | | | | | | | | |
| SVOC | (TIC) UNKNWON KETONE | | | | | 5 | 355 | 0.16 | 1.3 | | | | |
| SVOC | (TIC) UNKOWN | 1 | 356 | 0.39 | 0.39 | | | | | | | | |
| SVOC | (TIC) UNKOWN ACID | 1 | 356 | 0.9 | 0.9 | | | | | | | | |
| SVOC | (TIC) UNKOWN ALKANE | 1 | 356 | 0.21 | 0.21 | | | | | | | | |
| SVOC | (TIC) UNKOWN ALKYNE | 1 | 356 | 0.84 | 0.84 | | | | | | | | |
| SVOC | (TIC) UNKOWN CYCLOHEXANE DERIVATIV | 1 | 356 | 0.09 | 0.09 | | | | | | | | |
| SVOC | (TIC) UNKOWN PAH | 1 | 356 | 0.39 | 0.39 | | | | | | | | |
| SVOC | (TIC) UNKOWN SITOSTEROL DERIVATIVE | 1 | 356 | 0.25 | 0.25 | | | | | | | | |

**Table 1 Waterbodies TIC Summary (All Areas)**

| Group | Analyte | Soil 0-2 ft | | | | Sediment 0-0.5 ft | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SVOC | (TIC) URS-12-ENE | 1 | 356 | 0.42 | 0.42 | 5 | 355 | 7.3 | 14 | | | | |
| SVOC | (TIC) VITAMIN E | 1 | 356 | 0.81 | 0.81 | 51 | 355 | 0.42 | 16 | | | | |
| SVOC | (TIC) VITAMINE | 40 | 356 | 0.1 | 2.1 | 21 | 355 | 0.14 | 3.6 | | | | |
| SVOC | (TIC) Z-11-HEXADECENOIC ACID | 4 | 356 | 0.38 | 6.8 | | | | | | | | |
| SVOC | (TIC) Z-5-NONADECENE | 1 | 356 | 1.5 | 1.5 | | | | | | | | |
| SVOC | 3,3,5-TRIMETHYLCYCLOHEXANONE | | | | | 1 | 355 | 0.83 | 0.83 | | | | |
| VOC | (TIC) .BETA.-PINENE | 2 | 37 | 0.36 | 0.42 | | | | | | | | |
| VOC | (TIC) 1,2,4-TRIMETHYLBENZENE | | | | | 1 | 139 | 0.025 | 0.025 | | | | |
| VOC | (TIC) 1,3-CYCLOHEXADIENE,1-METHYL-4-(1-METHYL | 1 | 37 | 0.013 | 0.013 | | | | | | | | |
| VOC | (TIC) 1-ETHYL-3-METHYLCYCLOHEXANE (C,T) | | | | | 1 | 139 | 0.53 | 0.53 | | | | |
| VOC | (TIC) 1H-INDENE, 2,3-DIHYDRO-1,1-DIMETHYL- | | | | | 1 | 139 | 0.026 | 0.026 | | | | |
| VOC | (TIC) 1H-INDENE, 2,3-DIHYDRO-1,3-DIMETHYL- | | | | | 1 | 139 | 0.24 | 0.24 | | | | |
| VOC | (TIC) 1-METHYLDECAHYDRONAPHTHALENE | | | | | 1 | 139 | 0.033 | 0.033 | | | | |
| VOC | (TIC) 1R-.ALPHA.-PINENE | | | | | 2 | 139 | 0.0089 | 0.022 | | | | |
| VOC | (TIC) 1S-.ALPHA.-PINENE | 1 | 37 | 0.21 | 0.21 | | | | | | | | |
| VOC | (TIC) 1-TRIDECENE | | | | | 1 | 139 | 0.0092 | 0.0092 | | | | |
| VOC | (TIC) 2,3-DIHYDRO-1H-INDENE | | | | | 1 | 139 | 0.028 | 0.028 | | | | |
| VOC | (TIC) 2,3-DIHYDRO-1-METHYLINDENE | | | | | 1 | 139 | 0.34 | 0.34 | | | | |
| VOC | (TIC) 2-HEPTANONE, 6-METHYL- | | | | | 1 | 139 | 0.021 | 0.021 | | | | |
| VOC | (TIC) 2-PROPANOL | 1 | 37 | 0.0054 | 0.0054 | | | | | | | | |
| VOC | (TIC) 3-CARENE | 2 | 37 | 0.22 | 0.24 | | | | | | | | |
| VOC | (TIC) 3-OCTANONE | | | | | 1 | 139 | 0.018 | 0.018 | | | | |
| VOC | (TIC) 4,7-METHANOINDENE, 3A,4,5,6,7,7A-HEXAHYD | | | | | 1 | 139 | 0.021 | 0.021 | | | | |
| VOC | (TIC) AROMATIC DERIVATIVE | 8 | 37 | 0.024 | 0.16 | | | | | | | | |
| VOC | (TIC) BENZENE, (1-METHYLPROPYL)- | | | | | 1 | 139 | 0.031 | 0.031 | | | | |
| VOC | (TIC) BENZENE, 1,2-DIETHYL- | | | | | 1 | 139 | 0.084 | 0.084 | | | | |
| VOC | (TIC) BENZENE, 1-METHYL-4-(1-METHYLETHYL)- | | | | | 2 | 139 | 0.012 | 0.47 | | | | |
| VOC | (TIC) BENZENE, 1-METHYL-4-PROPY | | | | | 1 | 139 | 0.092 | 0.092 | | | | |
| VOC | (TIC) BENZENE, 2-BUTENYL- | | | | | 1 | 139 | 0.19 | 0.19 | | | | |
| VOC | (TIC) BENZENE, TERT-BUTYL- | | | | | 1 | 139 | 0.22 | 0.22 | | | | |
| VOC | (TIC) BENZENEACETALDEHYDE, .ALPHA.-METHYL- | | | | | 1 | 139 | 0.19 | 0.19 | | | | |
| VOC | (TIC) BICYCLO[2.2.1]HEPTAN-2-ONE,1,7,7-TRIMET | 1 | 37 | 0.37 | 0.37 | | | | | | | | |
| VOC | (TIC) BICYCLO[2.2.1]HEPTANE,7,7-DIMETHYL-2-MET | 2 | 37 | 0.11 | 0.11 | | | | | | | | |
| VOC | (TIC) BICYCLO[4.1.0]HEPT-2-ENE,3,7,7-TRIMETHYL | 1 | 37 | 0.012 | 0.012 | | | | | | | | |
| VOC | (TIC) C10H10O2UNKNOWN | 1 | 37 | 0.0092 | 0.0092 | | | | | | | | |
| VOC | (TIC) C10H14AROMATIC | 4 | 37 | 0.0059 | 0.024 | | | | | | | | |
| VOC | (TIC) C10H16AROMATIC | | | | | 1 | 139 | 0.022 | 0.022 | | | | |
| VOC | (TIC) C10H16UNKNOWN | 12 | 37 | 0.015 | 1.4 | | | | | | | | |
| VOC | (TIC) C10H20CYCLOALKANE | 1 | 37 | 0.032 | 0.032 | | | | | | | | |
| VOC | (TIC) C11H16OUNKNOWN | 5 | 37 | 0.007 | 0.029 | | | | | | | | |
| VOC | (TIC) C12H26ALKANE | | | | | 1 | 139 | 0.036 | 0.036 | | | | |
| VOC | (TIC) C14H20AROMATIC | | | | | 1 | 139 | 0.068 | 0.068 | | | | |

**Table 1 Waterbodies TIC Summary (All Areas)**

| Group | Analyte | Soil 0-2 ft | | | | Sediment 0-0.5 ft | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| VOC | (TIC) C15H24UNKNOWN | 9 | 37 | 0.01 | 1.2 | | | | | | | | |
| VOC | (TIC) CAMPHENE | 2 | 37 | 0.016 | 0.018 | 2 | 139 | 0.068 | 0.45 | | | | |
| VOC | (TIC) CAMPHOR | | | | | 1 | 139 | 0.13 | 0.13 | | | | |
| VOC | (TIC) CHLORODIFLUOROMETHANE | 5 | 37 | 0.006 | 0.18 | | | | | | | | |
| VOC | (TIC) CYCLOHEXANE, 1,2-DIMETHYL-, TRANS- | | | | | 1 | 139 | 0.085 | 0.085 | | | | |
| VOC | (TIC) CYCLOHEXENE, 4-METHYL-1-(1-METHYLETHYL)- | | | | | 2 | 139 | 0.0065 | 0.0076 | | | | |
| VOC | (TIC) CYCLOHEXENE,1-METHYL-4-(1-METHYLETHYLIDE | 2 | 37 | 0.041 | 0.044 | | | | | | | | |
| VOC | (TIC) CYCLOPENTANE, 1,3-DIMETHYL- | | | | | 1 | 139 | 0.16 | 0.16 | | | | |
| VOC | (TIC) CYCLOTETRASILOXANE, OCTAMETHYL- | | | | | 7 | 139 | 0.0089 | 0.12 | | | | |
| VOC | (TIC) CYCLOTRISILOXANE, HEXAMETHYL- | | | | | 1 | 139 | 0.064 | 0.064 | | | | |
| VOC | (TIC) DECAHYDRODIMETHYLNAPHTHALENEISOMER | 1 | 37 | 0.015 | 0.015 | | | | | | | | |
| VOC | (TIC) DECAHYDROMETHYLNAPHTHALENEISOMER | 1 | 37 | 0.032 | 0.032 | | | | | | | | |
| VOC | (TIC) DECAHYDRONAPHTHALENEISOMER | 1 | 37 | 0.014 | 0.014 | 3 | 139 | 0.032 | 0.038 | | | | |
| VOC | (TIC) DECANAL | | | | | 1 | 139 | 0.026 | 0.026 | | | | |
| VOC | (TIC) DIMETHYL SULFIDE | | | | | 2 | 139 | 0.14 | 2.4 | 1 | 20 | 0.00052 | 0.00052 |
| VOC | (TIC) DIPHENYL ETHER | | | | | 4 | 139 | 0.016 | 0.37 | | | | |
| VOC | (TIC) D-LIMONENE | 2 | 37 | 0.077 | 0.08 | 2 | 139 | 0.14 | 0.27 | | | | |
| VOC | (TIC) EUCALYPTOL | 1 | 37 | 0.25 | 0.25 | | | | | | | | |
| VOC | (TIC) HEXANAL | 1 | 37 | 0.038 | 0.038 | | | | | | | | |
| VOC | (TIC) HEXANE | 8 | 37 | 0.014 | 0.24 | 1 | 139 | 0.26 | 0.26 | | | | |
| VOC | (TIC) ISOCAMPHANE | | | | | 1 | 139 | 0.32 | 0.32 | | | | |
| VOC | (TIC) LIMONENE | | | | | 1 | 139 | 0.54 | 0.54 | | | | |
| VOC | (TIC) METHANE, DIBROMO- | | | | | 10 | 139 | 0.01 | 0.3 | | | | |
| VOC | (TIC) NAPHTHALENE, DECAHYDRO-2-METHYL- | | | | | 5 | 139 | 0.013 | 0.078 | | | | |
| VOC | (TIC) PENTALENE, OCTAHYDRO- | | | | | 1 | 139 | 0.1 | 0.1 | | | | |
| VOC | (TIC) PENTALENE, OCTAHYDRO-2-METHYL- | | | | | 1 | 139 | 0.056 | 0.056 | | | | |
| VOC | (TIC) PROPENYLBENZODIOXOLEISOMER | 1 | 37 | 1.2 | 1.2 | | | | | | | | |
| VOC | (TIC) PULEGONE | | | | | 1 | 139 | 0.02 | 0.02 | | | | |
| VOC | (TIC) SATURATED HYDROCARBON | 5 | 37 | 0.009 | 0.034 | | | | | | | | |
| VOC | (TIC) SULFUR DIOXIDE | | | | | 2 | 139 | 0.023 | 0.03 | | | | |
| VOC | (TIC) TOTAL ALKANES | | | | | | | | | 2 | 20 | 1E-10 | 1E-10 |
| VOC | (TIC) TRANS-DECALIN, 2-METHYL- | | | | | 6 | 139 | 0.011 | 0.13 | | | | |
| VOC | (TIC) TRIMETHYLSILANOL | 1 | 37 | 0.006 | 0.006 | | | | | | | | |
| VOC | (TIC) UNKNOWN | 11 | 37 | 0.0062 | 0.058 | 97 | 139 | 0.007 | 0.9 | 20 | 20 | 0.0026 | 0.0038 |
| VOC | (TIC) UNKNOWN ALKANE | | | | | 80 | 139 | 0.005 | 0.74 | | | | |
| VOC | (TIC) UNKNOWN AROMATIC COMPOUND | 1 | 37 | 0.013 | 0.013 | 3 | 139 | 0.37 | 1.6 | | | | |
| VOC | (TIC) UNKNOWN C3-ALKYLBENZENE | | | | | 3 | 139 | 0.12 | 0.27 | | | | |
| VOC | (TIC) UNKNOWN C4-ALKYLBENZENE | | | | | 5 | 139 | 0.12 | 0.73 | | | | |
| VOC | (TIC) UNKNOWN CYCLOALKANE | | | | | 8 | 139 | 0.019 | 0.27 | | | | |
| VOC | (TIC) UNKNOWN NAPHTHALENE DERIVATIVE | | | | | 1 | 139 | 0.006 | 0.006 | | | | |
| VOC | (TIC) UNKNOWN SILOXANE DERIVATIVE | | | | | 22 | 139 | 0.012 | 0.27 | | | | |
| VOC | (TIC) UNKNOWN SUBSTITUTED BENZENE | 2 | 37 | 0.022 | 0.051 | | | | | | | | |

**Table 1 Waterbodies TIC Summary (All Areas)**

| Group | Analyte | Soil 0-2 ft | | | | Sediment 0-0.5 ft | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| VOC | (TIC) UNKNOWN TERPENE | | | | | 4 | 139 | 0.0067 | 0.32 | | | | |
| VOC | (TIC) UNKNOWNALKANE | 3 | 37 | 0.012 | 0.095 | 4 | 139 | 0.049 | 0.29 | | | | |
| VOC | (TIC) UNKNOWNALKANE/UNKNOWN | | | | | 1 | 139 | 0.073 | 0.073 | | | | |
| VOC | (TIC) UNKNOWNCYCLOALKANE | 1 | 37 | 0.023 | 0.023 | | | | | | | | |
| VOC | (TIC) UNKNOWNSILOXANE | 18 | 37 | 0.0058 | 0.28 | 3 | 139 | 0.032 | 0.049 | | | | |
| VOC | (TIC) UNSATURATED HYDROCARBON | 1 | 37 | 0.076 | 0.076 | | | | | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SL | SVOC | (TIC) .BETA.-SITOSTEROL | | | | | | | | | 3 | 20 | 0.0039 | 0.0044 |
| SL | SVOC | (TIC) 1,2:4,5-DIBENZOPYRENE | | | | | 1 | 35 | 1.6 | 1.6 | | | | |
| SL | SVOC | (TIC) 1,2-BENZENEDICARBOXYLIC ACID, BIS(2-METH | | | | | 1 | 35 | 0.6 | 0.6 | | | | |
| SL | SVOC | (TIC) 1,2-BENZENEDICARBOXYLIC ACID, BUTYL 8-ME | | | | | 1 | 35 | 0.14 | 0.14 | | | | |
| SL | SVOC | (TIC) 1,2-BENZENEDICARBOXYLIC ACID, BUTYL CYCL | | | | | 1 | 35 | 0.42 | 0.42 | | | | |
| SL | SVOC | (TIC) 1,2-BENZENEDICARBOXYLIC ACID, MONO(2-ETH | | | | | 1 | 35 | 0.1 | 0.1 | | | | |
| SL | SVOC | (TIC) 1,2-CYCLOHEXANEDIOL, TRANS- | | | | | | | | | 1 | 20 | 0.0033 | 0.0033 |
| SL | SVOC | (TIC) 1,2-DODECANEDIOL | | | | | 1 | 35 | 0.44 | 0.44 | | | | |
| SL | SVOC | (TIC) 1,2-TETRADECANEDIOL | | | | | 1 | 35 | 0.13 | 0.13 | | | | |
| SL | SVOC | (TIC) 1,8-NAPHTHALIC ANHYDRIDE | | | | | 1 | 35 | 0.9 | 0.9 | | | | |
| SL | SVOC | (TIC) 10,18-BISNORABIETA-5,7,9(10),11,13-PENTA | | | | | 7 | 35 | 0.14 | 3.3 | | | | |
| SL | SVOC | (TIC) 10,18-BISNORABIETA-8,11,13-TRIENE | | | | | 3 | 35 | 0.63 | 2.7 | | | | |
| SL | SVOC | (TIC) 10-METHYLNONADECANE | | | | | 1 | 35 | 0.52 | 0.52 | | | | |
| SL | SVOC | (TIC) 10-NONADECANOL | | | | | 1 | 35 | 1.5 | 1.5 | | | | |
| SL | SVOC | (TIC) 11H-BENZO[A]CARBAZOLE | | | | | 1 | 35 | 8.3 | 8.3 | | | | |
| SL | SVOC | (TIC) 11H-BENZO[A]FLUOREN-11-ONE | | | | | 5 | 35 | 0.15 | 12 | | | | |
| SL | SVOC | (TIC) 11H-BENZO[A]FLUORENE | | | | | 4 | 35 | 0.091 | 16 | | | | |
| SL | SVOC | (TIC) 11H-BENZO[B]FLUORENE | | | | | 4 | 35 | 0.17 | 23 | | | | |
| SL | SVOC | (TIC) 13-DOCOSENAMIDE, (Z)- | | | | | 10 | 35 | 0.24 | 1.8 | | | | |
| SL | SVOC | (TIC) 13-TETRADECEN-1-OL ACETATE | | | | | 1 | 35 | 0.57 | 0.57 | | | | |
| SL | SVOC | (TIC) 17-(1,5-DIMETHYLHEXYL)-10,13-DIMETHYL-4- | | | | | 2 | 35 | 0.46 | 0.66 | | | | |
| SL | SVOC | (TIC) 17-PENTATRIACONTENE | | | | | 4 | 35 | 0.2 | 11 | | | | |
| SL | SVOC | (TIC) 18-NORABIETANE | | | | | 12 | 35 | 0.17 | 3.5 | | | | |
| SL | SVOC | (TIC) 1-BUTENE, 2-ETHYL-3-METHYL- | | | | | 1 | 35 | 2 | 2 | | | | |
| SL | SVOC | (TIC) 1-DECENE | | | | | 1 | 35 | 1.2 | 1.2 | | | | |
| SL | SVOC | (TIC) 1-DOCOSANOL | | | | | 1 | 35 | 1.1 | 1.1 | | | | |
| SL | SVOC | (TIC) 1-DOCOSENE | | | | | 4 | 35 | 0.39 | 12 | | | | |
| SL | SVOC | (TIC) 1-DODECANOL | | | | | 2 | 35 | 0.27 | 0.46 | | | | |
| SL | SVOC | (TIC) 1-EICOSANOL | | | | | 2 | 35 | 0.14 | 1.6 | | | | |
| SL | SVOC | (TIC) 1H-CYCLOPROP[E]AZULENE, 1A,2,3,4,4A,5,6, | | | | | 1 | 35 | 0.92 | 0.92 | | | | |
| SL | SVOC | (TIC) 1-HEXACOSANOL | | | | | 1 | 35 | 5.8 | 5.8 | | | | |
| SL | SVOC | (TIC) 1-HEXADECANOL | | | | | 2 | 35 | 0.48 | 1.6 | | | | |
| SL | SVOC | (TIC) 1-IODO-2-METHYLUNDECANE | | | | | 1 | 35 | 0.79 | 0.79 | | | | |
| SL | SVOC | (TIC) 1-N-HEXYLADAMANTANE | | | | | 1 | 35 | 0.74 | 0.74 | | | | |
| SL | SVOC | (TIC) 1-NONADECENE | | | | | 1 | 35 | 1.9 | 1.9 | | | | |
| SL | SVOC | (TIC) 1-PENTENE, 2,3-DIMETHYL- | | | | | 3 | 35 | 1 | 2.2 | | | | |
| SL | SVOC | (TIC) 1-PENTENE, 3,3-DIMETHYL- | | | | | 3 | 35 | 0.75 | 3 | | | | |
| SL | SVOC | (TIC) 1-PHENANTHRENECARBOXYLIC ACID, 1,2,3,4,4 | | | | | 2 | 35 | 1.1 | 21 | | | | |
| SL | SVOC | (TIC) 1-PHENANTHRENECARBOXYLIC ACID, 7-ETHENYL | | | | | 1 | 35 | 8 | 8 | | | | |
| SL | SVOC | (TIC) 1-PHENANTHRENECARBOXYLIC ACID, 7-ETHYL-1 | | | | | 1 | 35 | 3.4 | 3.4 | | | | |
| SL | SVOC | (TIC) 1R-.ALPHA.-PINENE | | | | | 1 | 35 | 0.43 | 0.43 | | | | |
| SL | SVOC | (TIC) 1-TRIDECANOL | | | | | 3 | 35 | 0.17 | 0.35 | | | | |
| SL | SVOC | (TIC) 1-UNDECANOL | | | | | 3 | 35 | 0.34 | 0.9 | | | | |
| SL | SVOC | (TIC) 2(1H)NAPHTHALENONE, 3,5,6,7,8,8A-HEXAHYD | | | | | 4 | 35 | 0.14 | 2.5 | | | | |
| SL | SVOC | (TIC) 2(1H)-PHENANTHRENONE, 3,4,4A,4B,5,6,7,8, | | | | | 1 | 35 | 0.63 | 0.63 | | | | |
| SL | SVOC | (TIC) 2-(4A,8-DIMETHYL-6-OXO-1,2,3,4,4A,5,6,8A | | | | | 1 | 35 | 1.3 | 1.3 | | | | |
| SL | SVOC | (TIC) 2,2,4A,6A,8A,9,12B,14A-OCTAMETHYL-1,2,3, | | | | | 4 | 35 | 0.4 | 4.8 | | | | |
| SL | SVOC | (TIC) 2,2,6-TRIMETHYL-1-(2-METHYL-CYCLOBUT-2-E | | | | | 2 | 35 | 0.16 | 1.8 | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SL | SVOC | (TIC) 2,2-DICHLOROCYCLOPROPYLACETONITRILE | | | | | | | | | 1 | 20 | 0.0022 | 0.0022 |
| SL | SVOC | (TIC) 26-NOR-5-CHOLESTEN-3.BETA.-OL-25-ONE | | | | | 1 | 35 | 0.63 | 0.63 | 1 | 20 | 0.0028 | 0.0028 |
| SL | SVOC | (TIC) 28-NOR-17.ALPHA.(H)-HOPANE | | | | | 3 | 35 | 0.29 | 1.2 | | | | |
| SL | SVOC | (TIC) 28-NOR-17.BETA.(H)-HOPANE | | | | | 3 | 35 | 0.17 | 1.6 | | | | |
| SL | SVOC | (TIC) 2-BROMO DODECANE | | | | | 1 | 35 | 0.91 | 0.91 | | | | |
| SL | SVOC | (TIC) 2-BUTENE, 2,3-DIMETHYL- | | | | | 1 | 35 | 0.49 | 0.49 | | | | |
| SL | SVOC | (TIC) 2-HEPTACOSANONE | | | | | 1 | 35 | 1.5 | 1.5 | | | | |
| SL | SVOC | (TIC) 2-HEXADECANONE | | | | | 2 | 35 | 0.2 | 0.81 | | | | |
| SL | SVOC | (TIC) 2-METHYL-3-PHENYLPYRIDINE | | | | | 2 | 35 | 0.31 | 0.77 | | | | |
| SL | SVOC | (TIC) 2-NAPHTHALENEMETHANOL, DECAHYDRO-.ALPHA. | | | | | 1 | 35 | 0.28 | 0.28 | | | | |
| SL | SVOC | (TIC) 2-NONADECANONE | | | | | 2 | 35 | 0.15 | 0.18 | | | | |
| SL | SVOC | (TIC) 2-PENTACOSANONE | | | | | 4 | 35 | 0.17 | 1.9 | | | | |
| SL | SVOC | (TIC) 2-PENTADECANONE | | | | | 1 | 35 | 0.64 | 0.64 | | | | |
| SL | SVOC | (TIC) 2-PENTANONE, 4-HYDROXY-4-METHYL- | | | | | 35 | 35 | 8.8 | 63 | 15 | 20 | 0.0023 | 0.12 |
| SL | SVOC | (TIC) 2-PENTENE, 4-METHYL-, (E)- | | | | | 1 | 35 | 0.42 | 0.42 | | | | |
| SL | SVOC | (TIC) 2-PHENYLNAPHTHALENE | | | | | 2 | 35 | 0.16 | 11 | | | | |
| SL | SVOC | (TIC) 2-UNDECENE, 5-METHYL- | | | | | 1 | 35 | 0.18 | 0.18 | | | | |
| SL | SVOC | (TIC) 3-AMINOPYRENE | | | | | 1 | 35 | 12 | 12 | | | | |
| SL | SVOC | (TIC) 3-EICOSENE, (E)- | | | | | 1 | 35 | 1.1 | 1.1 | | | | |
| SL | SVOC | (TIC) 3-METHYLCHOLANTHRENE | | | | | 1 | 35 | 0.22 | 0.22 | | | | |
| SL | SVOC | (TIC) 3-OCTADECENE, (E)- | | | | | 1 | 35 | 1.1 | 1.1 | | | | |
| SL | SVOC | (TIC) 3-PENTEN-2-ONE, 4-METHYL- | | | | | 21 | 35 | 0.096 | 1.2 | | | | |
| SL | SVOC | (TIC) 3-PENTENAL, 4-METHYL- | | | | | 1 | 35 | 1.9 | 1.9 | | | | |
| SL | SVOC | (TIC) 3-TETRADECENE, (E)- | | | | | 3 | 35 | 0.13 | 0.35 | | | | |
| SL | SVOC | (TIC) 3-TETRADECENE, (Z)- | | | | | 1 | 35 | 1 | 1 | | | | |
| SL | SVOC | (TIC) 4,4,6A,6B,8A,11,11,14B-OCTAMETHYL-1,4,4A | | | | | 3 | 35 | 1.2 | 3 | | | | |
| SL | SVOC | (TIC) 4,4,6A,6B,8A,11,12,14B-OCTAMETHYL-1,4,4A | | | | | 1 | 35 | 0.99 | 0.99 | | | | |
| SL | SVOC | (TIC) 4B,8-DIMETHYL-2-ISOPROPYLPHENANTHRENE | | | | | 5 | 35 | 0.7 | 4.6 | | | | |
| SL | SVOC | (TIC) 4-CYCLOHEXYLIDENE-N-BUTANOL | | | | | 1 | 35 | 0.68 | 0.68 | | | | |
| SL | SVOC | (TIC) 4H-CYCLOPENTA[DEF]PHENANTHRENE | | | | | 3 | 35 | 1.9 | 19 | | | | |
| SL | SVOC | (TIC) 4-HEPTAFLUOROBUTYRYLOXYHEXADECANE | | | | | 1 | 35 | 0.58 | 0.58 | | | | |
| SL | SVOC | (TIC) 4-NONENE, 3-METHYL-, (Z)- | | | | | 1 | 35 | 2.4 | 2.4 | | | | |
| SL | SVOC | (TIC) 4-OCTENE, 2,3,6-TRIMETHYL- | | | | | 1 | 35 | 1.4 | 1.4 | | | | |
| SL | SVOC | (TIC) 5(1H)-AZULENONE, 2,4,6,7,8,8A-HEXAHYDRO- | | | | | 1 | 35 | 0.21 | 0.21 | | | | |
| SL | SVOC | (TIC) 5,12-NAPHTHACENEDIONE | | | | | 3 | 35 | 1.2 | 7.7 | | | | |
| SL | SVOC | (TIC) 5H-3,5A-EPOXYNAPHTH[2,1-C]OXEPIN, DODECA | | | | | 1 | 35 | 0.97 | 0.97 | | | | |
| SL | SVOC | (TIC) 6-ISOPROPENYL-4,8A-DIMETHYL-4A,5,6,7,8,8 | | | | | 1 | 35 | 1.1 | 1.1 | | | | |
| SL | SVOC | (TIC) 7,12A-DIMETHYL-1,2,3,4,4A,11,12,12A-OCTA | | | | | 2 | 35 | 0.3 | 0.5 | | | | |
| SL | SVOC | (TIC) 7,12-DIHYDROBENZO[K]FLUORANTHENE | | | | | 1 | 35 | 1.3 | 1.3 | | | | |
| SL | SVOC | (TIC) 7H-BENZO[C]CARBAZOLE | | | | | 2 | 35 | 1.3 | 2.4 | | | | |
| SL | SVOC | (TIC) 7-ISOPROPENYL-1,4A-DIMETHYL-4,4A,5,6,7,8 | | | | | 2 | 35 | 0.5 | 0.86 | | | | |
| SL | SVOC | (TIC) 7-NONENAMIDE | | | | | 1 | 35 | 0.29 | 0.29 | | | | |
| SL | SVOC | (TIC) 9,10-ANTHRACENEDIONE | | | | | 4 | 35 | 0.28 | 27 | | | | |
| SL | SVOC | (TIC) 9-HEXADECENOIC ACID | | | | | 1 | 35 | 1.1 | 1.1 | | | | |
| SL | SVOC | (TIC) 9H-FLUORENE, 9-(PHENYLMETHYLENE)- | | | | | 1 | 35 | 0.95 | 0.95 | | | | |
| SL | SVOC | (TIC) 9-OCTADECENAMIDE, (Z)- | | | | | 19 | 35 | 0.25 | 2.2 | | | | |
| SL | SVOC | (TIC) 9-OCTADECENE, (E)- | | | | | 1 | 35 | 0.43 | 0.43 | | | | |
| SL | SVOC | (TIC) 9-PHENYL-5H-BENZOCYCLOHEPTENE | | | | | 1 | 35 | 1.1 | 1.1 | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SL | SVOC | (TIC) ACETIC ACID, 3,7,11,15-TETRAMETHYL-HEXAD | | | | | 2 | 35 | 0.45 | 1.8 | | | | |
| SL | SVOC | (TIC) ALPHA.-AMYRIN | | | | | 1 | 35 | 1.8 | 1.8 | | | | |
| SL | SVOC | (TIC) ANDROST-4-EN-3-ONE, 17-HYDROXY-, (10,ALP | | | | | 1 | 35 | 0.22 | 0.22 | | | | |
| SL | SVOC | (TIC) ANDROST-4-EN-3-ONE, 17-HYDROXY-, (10.ALP | | | | | 1 | 35 | 0.62 | 0.62 | | | | |
| SL | SVOC | (TIC) ANDROST-4-EN-3-ONE, 17-HYDROXY-, (17.BET | | | | | 1 | 35 | 0.17 | 0.17 | | | | |
| SL | SVOC | (TIC) ANDROST-5-EN-3-OL, 4,4-DIMETHYL-, (3.BET | | | | | 1 | 35 | 3.9 | 3.9 | | | | |
| SL | SVOC | (TIC) A-NEOGAMMACER-22(29)-ENE | | | | | 3 | 35 | 0.14 | 1.4 | | | | |
| SL | SVOC | (TIC) ANTHRACENE, 1-METHYL- | | | | | 1 | 35 | 0.27 | 0.27 | | | | |
| SL | SVOC | (TIC) ANTHRACENE, 2-METHYL- | | | | | 1 | 35 | 0.27 | 0.27 | | | | |
| SL | SVOC | (TIC) ANTHRACENE, 9-DODECYLTETRADECAHYDRO- | | | | | 1 | 35 | 3.8 | 3.8 | | | | |
| SL | SVOC | (TIC) AZULENE, 1,2,3,4,5,6,7,8-OCTAHYDRO-1,4-D | | | | | 1 | 35 | 0.59 | 0.59 | | | | |
| SL | SVOC | (TIC) BENZ(A)ANTHRACENE-7,12-DIONE | | | | | 2 | 35 | 1.8 | 11 | | | | |
| SL | SVOC | (TIC) BENZ[A]ANTHRACENE, 1-METHYL- | | | | | 1 | 35 | 0.34 | 0.34 | | | | |
| SL | SVOC | (TIC) BENZ[A]ANTHRACENE, 7-METHYL- | | | | | 2 | 35 | 1.2 | 9.5 | | | | |
| SL | SVOC | (TIC) BENZ[E]ACEPHENANTHRYLENE | | | | | 2 | 35 | 0.24 | 1 | | | | |
| SL | SVOC | (TIC) BENZENEACETIC ACID | | | | | | | | | 2 | 20 | 0.0028 | 0.0042 |
| SL | SVOC | (TIC) BENZENEETHANAMINE, N-(1-METHYLETHYLIDENE | | | | | 1 | 35 | 0.13 | 0.13 | | | | |
| SL | SVOC | (TIC) BENZENEPROPANOIC ACID | | | | | | | | | 1 | 20 | 0.0032 | 0.0032 |
| SL | SVOC | (TIC) BENZO(A)ACRIDINE | | | | | 1 | 35 | 6.9 | 6.9 | | | | |
| SL | SVOC | (TIC) BENZO(C)CARBAZOLE | | | | | 1 | 35 | 1.4 | 1.4 | | | | |
| SL | SVOC | (TIC) BENZO[B]NAPHTHO[1,2-D]THIOPHENE | | | | | 2 | 35 | 2.5 | 9.8 | | | | |
| SL | SVOC | (TIC) BENZO[B]NAPHTHO[2,1-D]THIOPHENE | | | | | 4 | 35 | 1.5 | 18 | | | | |
| SL | SVOC | (TIC) BENZO[B]NAPHTHO[2,3-D]FURAN | | | | | 1 | 35 | 7.7 | 7.7 | | | | |
| SL | SVOC | (TIC) BENZO[E]PYRENE | | | | | 5 | 35 | 1.2 | 60 | | | | |
| SL | SVOC | (TIC) BENZO[GHI]FLUORANTHENE | | | | | 4 | 35 | 0.1 | 2.6 | | | | |
| SL | SVOC | (TIC) BENZO[J]FLUORANTHENE | | | | | 3 | 35 | 1.5 | 12 | | | | |
| SL | SVOC | (TIC) BENZO[KL]XANTHENE | | | | | 1 | 35 | 1.4 | 1.4 | | | | |
| SL | SVOC | (TIC) BETA.-AMYRIN | | | | | 3 | 35 | 1.1 | 2.8 | | | | |
| SL | SVOC | (TIC) BETA.-SITOSTEROL | | | | | 5 | 35 | 1.5 | 7.1 | | | | |
| SL | SVOC | (TIC) BROMOACETIC ACID, OCTADECYL ESTER | | | | | 1 | 35 | 2.2 | 2.2 | | | | |
| SL | SVOC | (TIC) BUTANE, 2-METHOXY-2-METHYL- | | | | | | | | | 4 | 20 | 0.17 | 0.21 |
| SL | SVOC | (TIC) BUTANE, 2-METHOXY-2-METHYL-, FILTERED | | | | | | | | | 4 | 20 | 0.14 | 0.2 |
| SL | SVOC | (TIC) BUTANOIC ACID, 2-METHYL- | | | | | | | | | 1 | 20 | 0.0036 | 0.0036 |
| SL | SVOC | (TIC) BUTANOIC ACID, 3-METHYL- | | | | | | | | | 2 | 20 | 0.0039 | 0.0064 |
| SL | SVOC | (TIC) CAMPESTEROL | | | | | 2 | 35 | 0.94 | 1.7 | | | | |
| SL | SVOC | (TIC) CHOLEST-5-EN-3-OL (3.BETA.)- | | | | | 2 | 35 | 0.89 | 3.1 | | | | |
| SL | SVOC | (TIC) CHOLESTAN-3-OL | | | | | 2 | 35 | 0.58 | 0.77 | | | | |
| SL | SVOC | (TIC) CHOLESTANE, 3-ETHOXY-, (3.BETA.,5.ALPHA. | | | | | 2 | 35 | 2.5 | 14 | | | | |
| SL | SVOC | (TIC) CHOLESTANOL | | | | | 1 | 35 | 0.89 | 0.89 | | | | |
| SL | SVOC | (TIC) CHRYSENE, 6-METHYL- | | | | | 1 | 35 | 0.11 | 0.11 | | | | |
| SL | SVOC | (TIC) CYCLIC OCTAATOMIC SULFUR | | | | | 14 | 35 | 0.089 | 6 | 3 | 20 | 0.0041 | 0.012 |
| SL | SVOC | (TIC) CYCLOHEXASILOXANE, DODECAMETHYL- | | | | | | | | | 1 | 20 | 0.0022 | 0.0022 |
| SL | SVOC | (TIC) CYCLOPENTA(CD)PYRENE, 3,4-DIHYDRO- | | | | | 3 | 35 | 0.24 | 9.5 | | | | |
| SL | SVOC | (TIC) CYCLOPENTA(DEF)PHENANTHRENONE | | | | | 1 | 35 | 0.14 | 0.14 | | | | |
| SL | SVOC | (TIC) CYCLOPENTADECANE | | | | | 1 | 35 | 0.15 | 0.15 | | | | |
| SL | SVOC | (TIC) D:C-FRIEDOOLEAN-8-EN-3-ONE | | | | | 3 | 35 | 1.9 | 5.4 | | | | |
| SL | SVOC | (TIC) DECANE | | | | | | | | | 4 | 20 | 0.0021 | 0.0025 |
| SL | SVOC | (TIC) DECANE, 2,2,8-TRIMETHYL- | | | | | 1 | 35 | 0.19 | 0.19 | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SL | SVOC | (TIC) DECANE, 2,3,8-TRIMETHYL- | | | | | 1 | 35 | 0.2 | 0.2 | | | | |
| SL | SVOC | (TIC) DECANE, 3,7-DIMETHYL- | | | | | 4 | 35 | 0.19 | 8.4 | | | | |
| SL | SVOC | (TIC) DECANE, 3,8-DIMETHYL- | | | | | 1 | 35 | 0.27 | 0.27 | | | | |
| SL | SVOC | (TIC) DECANE, 3-METHYL- | | | | | 3 | 35 | 0.53 | 2.7 | | | | |
| SL | SVOC | (TIC) DECANE, 4-METHYL- | | | | | 1 | 35 | 0.92 | 0.92 | | | | |
| SL | SVOC | (TIC) DECANE, 5,6-DIPROPYL- | | | | | 1 | 35 | 1.2 | 1.2 | | | | |
| SL | SVOC | (TIC) DECANE, 5-METHYL- | | | | | 1 | 35 | 0.91 | 0.91 | | | | |
| SL | SVOC | (TIC) DECANE, 5-PROPYL- | | | | | 1 | 35 | 0.45 | 0.45 | | | | |
| SL | SVOC | (TIC) DECANE, FILTERED | | | | | | | | | 4 | 20 | 0.0022 | 0.0026 |
| SL | SVOC | (TIC) D-FRIEDOOLEAN-14-EN-3-ONE | | | | | 1 | 35 | 4.7 | 4.7 | | | | |
| SL | SVOC | (TIC) DIBENZ(A,E)ACEANTHRYLENE | | | | | 1 | 35 | 1.1 | 1.1 | | | | |
| SL | SVOC | (TIC) DINAPHTHO[1,2-B,1,2-D]FURAN | | | | | 1 | 35 | 2.2 | 2.2 | | | | |
| SL | SVOC | (TIC) DINAPHTHO[1,2-B:1,2-D]FURAN | | | | | 2 | 35 | 0.18 | 6.4 | | | | |
| SL | SVOC | (TIC) DINAPHTHO[1,2-B:1,2-D]THIOPHENE | | | | | 1 | 35 | 13 | 13 | | | | |
| SL | SVOC | (TIC) DIPHENYL ETHER | | | | | 3 | 35 | 0.37 | 16 | | | | |
| SL | SVOC | (TIC) DODECANAMIDE | | | | | 6 | 35 | 0.1 | 0.23 | | | | |
| SL | SVOC | (TIC) DODECANE | | | | | 1 | 35 | 2.2 | 2.2 | | | | |
| SL | SVOC | (TIC) DODECANE, 2,6,10-TRIMETHYL- | | | | | 1 | 35 | 0.12 | 0.12 | | | | |
| SL | SVOC | (TIC) DODECANE, 2,7,10-TRIMETHYL- | | | | | 1 | 35 | 0.45 | 0.45 | | | | |
| SL | SVOC | (TIC) DODECANE, 2-METHYL- | | | | | 1 | 35 | 1.7 | 1.7 | | | | |
| SL | SVOC | (TIC) DODECANE, 5-METHYL- | | | | | 1 | 35 | 0.95 | 0.95 | | | | |
| SL | SVOC | (TIC) DODECYL ACRYLATE | | | | | 9 | 35 | 0.098 | 0.71 | | | | |
| SL | SVOC | (TIC) E-7-OCTADECENE | | | | | 1 | 35 | 1.6 | 1.6 | | | | |
| SL | SVOC | (TIC) EICOSANE | | | | | 10 | 35 | 0.2 | 3.4 | | | | |
| SL | SVOC | (TIC) EICOSANE, 10-METHYL- | | | | | 1 | 35 | 3 | 3 | | | | |
| SL | SVOC | (TIC) ERGOST-5-EN-3-OL, (3.BETA.)- | | | | | 1 | 35 | 1.2 | 1.2 | | | | |
| SL | SVOC | (TIC) ERGOSTANOL | | | | | 2 | 35 | 2.1 | 9.2 | | | | |
| SL | SVOC | (TIC) ETHYL CITRATE | | | | | | | | | 2 | 20 | 0.0031 | 0.007 |
| SL | SVOC | (TIC) FARNESYL BROMIDE | | | | | 1 | 35 | 8.7 | 8.7 | | | | |
| SL | SVOC | (TIC) FLUORANTHENE, 2-METHYL- | | | | | 1 | 35 | 0.28 | 0.28 | | | | |
| SL | SVOC | (TIC) FORMAMIDE, N-(2-PHENYLETHYL)- | | | | | 1 | 35 | 0.16 | 0.16 | | | | |
| SL | SVOC | (TIC) FORMAMIDE, N,N-DIMETHYL-, FILTERED | | | | | | | | | 3 | 20 | 0.0052 | 0.015 |
| SL | SVOC | (TIC) FRIEDELAN-3-ONE | | | | | 7 | 35 | 0.87 | 11 | | | | |
| SL | SVOC | (TIC) GAMMA.-SITOSTEROL | | | | | 4 | 35 | 3.1 | 7.5 | | | | |
| SL | SVOC | (TIC) HENEICOSANE | | | | | 5 | 35 | 0.31 | 2.1 | | | | |
| SL | SVOC | (TIC) HEPTACOSANE | | | | | 6 | 35 | 0.1 | 2.5 | | | | |
| SL | SVOC | (TIC) HEPTACOSANE, 1-CHLORO- | | | | | 2 | 35 | 0.12 | 0.4 | | | | |
| SL | SVOC | (TIC) HEPTADECANE | | | | | 11 | 35 | 0.098 | 2 | | | | |
| SL | SVOC | (TIC) HEPTADECANE, 2,6,10,15-TETRAMETHYL- | | | | | 3 | 35 | 0.34 | 1.6 | | | | |
| SL | SVOC | (TIC) HEPTADECANE, 9-HEXYL- | | | | | 1 | 35 | 1.6 | 1.6 | | | | |
| SL | SVOC | (TIC) HEPTADECANE, 9-OCTYL- | | | | | 1 | 35 | 0.88 | 0.88 | | | | |
| SL | SVOC | (TIC) HEXADECANAMIDE | | | | | 10 | 35 | 0.089 | 0.37 | | | | |
| SL | SVOC | (TIC) HEXADECANE | | | | | 12 | 35 | 0.15 | 2.4 | | | | |
| SL | SVOC | (TIC) HEXADECANE, 2,6,10,14-TETRAMETHYL- | | | | | 4 | 35 | 0.22 | 0.63 | | | | |
| SL | SVOC | (TIC) HEXATRIACONTANE | | | | | 3 | 35 | 0.15 | 1 | | | | |
| SL | SVOC | (TIC) HOP-22(29)-EN-3.BETA.-OL | | | | | 1 | 35 | 0.17 | 0.17 | | | | |
| SL | SVOC | (TIC) INDENO[1,2,3-CD]FLUORANTHENE | | | | | 2 | 35 | 1.7 | 14 | | | | |
| SL | SVOC | (TIC) LONGIFOLENALDEHYDE | | | | | 1 | 35 | 3.5 | 3.5 | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SL | SVOC | (TIC) LUP-20(29)-EN-3-ONE | | | | | 7 | 35 | 0.52 | 4.9 | | | | |
| SL | SVOC | (TIC) LUPAN-3-ONE | | | | | 1 | 35 | 0.35 | 0.35 | | | | |
| SL | SVOC | (TIC) LUPEOL | | | | | 2 | 35 | 2.2 | 2.6 | | | | |
| SL | SVOC | (TIC) METHYL 3-KETO-BISNORALLOCHOLANATE | | | | | 1 | 35 | 0.35 | 0.35 | | | | |
| SL | SVOC | (TIC) MYRISTOLEIC ACID | | | | | 1 | 35 | 0.3 | 0.3 | | | | |
| SL | SVOC | (TIC) NAPHTHALENE, 1,2,3,5,6,7,8,8A-OCTAHYDRO- | | | | | 1 | 35 | 0.9 | 0.9 | | | | |
| SL | SVOC | (TIC) NAPHTHALENE, 2-PHENYL- | | | | | 1 | 35 | 0.29 | 0.29 | | | | |
| SL | SVOC | (TIC) NAPHTHALENE, DECAHYDRO-, TRANS- | | | | | 1 | 35 | 2 | 2 | | | | |
| SL | SVOC | (TIC) NAPHTHO[2,1,8,7-KLMN]XANTHENE | | | | | 1 | 35 | 1.2 | 1.2 | | | | |
| SL | SVOC | (TIC) N-HEXADECANOIC ACID | | | | | 5 | 35 | 0.14 | 1.5 | 9 | 20 | 0.0025 | 0.009 |
| SL | SVOC | (TIC) N-HEXADECANOIC ACID, FILTERED | | | | | | | | | 1 | 20 | 0.0051 | 0.0051 |
| SL | SVOC | (TIC) NONACOSANE | | | | | 2 | 35 | 0.98 | 1.8 | | | | |
| SL | SVOC | (TIC) NONADECANE | | | | | 2 | 35 | 0.78 | 2 | | | | |
| SL | SVOC | (TIC) NONADECANE, 1-CHLORO- | | | | | 1 | 35 | 0.8 | 0.8 | | | | |
| SL | SVOC | (TIC) NONADECANE, 2-METHYL- | | | | | 1 | 35 | 0.22 | 0.22 | | | | |
| SL | SVOC | (TIC) O-(P-(DIMETHYLAMINO)BENZYLIDENEAMINO)PHE | | | | | 1 | 35 | 2 | 2 | | | | |
| SL | SVOC | (TIC) OCTACOSANE | | | | | 7 | 35 | 0.12 | 2.1 | | | | |
| SL | SVOC | (TIC) OCTADECANAL | | | | | 2 | 35 | 0.13 | 0.65 | | | | |
| SL | SVOC | (TIC) OCTADECANAMIDE | | | | | 2 | 35 | 0.59 | 0.61 | | | | |
| SL | SVOC | (TIC) OCTADECANE | | | | | 4 | 35 | 0.3 | 1.2 | | | | |
| SL | SVOC | (TIC) OCTADECANE, 1-CHLORO- | | | | | 2 | 35 | 0.74 | 1.3 | | | | |
| SL | SVOC | (TIC) OCTADECANOIC ACID | | | | | | | | | 7 | 20 | 0.0028 | 0.013 |
| SL | SVOC | (TIC) OCTANOIC ACID | | | | | | | | | 2 | 20 | 0.0025 | 0.0063 |
| SL | SVOC | (TIC) OLEAN-12-ENE | | | | | 1 | 35 | 0.61 | 0.61 | | | | |
| SL | SVOC | (TIC) OLEAN-18-ENE | | | | | 1 | 35 | 0.97 | 0.97 | | | | |
| SL | SVOC | (TIC) O-TERPHENYL | | | | | 3 | 35 | 1 | 8.6 | | | | |
| SL | SVOC | (TIC) OXIRANE, 2-DECYL-3-(5-METHYLHEXYL)-, CIS | | | | | 1 | 35 | 1.1 | 1.1 | | | | |
| SL | SVOC | (TIC) OXIRANE, 3-ETHYL-2,2-DIMETHYL- | | | | | 1 | 35 | 1.3 | 1.3 | | | | |
| SL | SVOC | (TIC) OXIRANE, TETRAMETHYL- | | | | | 1 | 35 | 0.85 | 0.85 | | | | |
| SL | SVOC | (TIC) PENTACOSANE | | | | | 1 | 35 | 1.9 | 1.9 | | | | |
| SL | SVOC | (TIC) PENTADECANAL- | | | | | 1 | 35 | 0.92 | 0.92 | | | | |
| SL | SVOC | (TIC) PENTADECANE | | | | | 7 | 35 | 0.26 | 2.4 | | | | |
| SL | SVOC | (TIC) PENTADECANE, 7-METHYL- | | | | | 2 | 35 | 0.33 | 0.62 | | | | |
| SL | SVOC | (TIC) PENTADECANE, 8-HEPTYL- | | | | | 1 | 35 | 1.5 | 1.5 | | | | |
| SL | SVOC | (TIC) PENTAFLUOROPROPIONIC ACID, UNDECYL ESTER | | | | | 1 | 35 | 1.4 | 1.4 | | | | |
| SL | SVOC | (TIC) PERYLENE | | | | | 11 | 35 | 0.14 | 29 | | | | |
| SL | SVOC | (TIC) PHENANTHRENE, 1-METHYL- | | | | | 1 | 35 | 0.26 | 0.26 | | | | |
| SL | SVOC | (TIC) PHENANTHRENE, 1-METHYL-7-(1-METHYLETHYL) | | | | | 7 | 35 | 0.2 | 8.9 | | | | |
| SL | SVOC | (TIC) PHENANTHRENE, 2-DODECYLTETRADECAHYDRO- | | | | | 1 | 35 | 0.46 | 0.46 | | | | |
| SL | SVOC | (TIC) PHENANTHRENE, 2-METHYL- | | | | | 2 | 35 | 0.93 | 9 | | | | |
| SL | SVOC | (TIC) PHENANTHRENE, 3,6-DIMETHYL- | | | | | 1 | 35 | 0.27 | 0.27 | | | | |
| SL | SVOC | (TIC) PHENOL, 2,4-BIS(1,1-DIMETHYLET, FILTERED | | | | | | | | | 2 | 20 | 0.003 | 0.0039 |
| SL | SVOC | (TIC) PHENOL, 4,4-(1-METHYLETHYLIDENE)BIS- | | | | | 1 | 35 | 1.8 | 1.8 | | | | |
| SL | SVOC | (TIC) PHTHALIC ACID, BIS(7-METHYLOCTYL) ESTER | | | | | | | | | 1 | 20 | 0.12 | 0.12 |
| SL | SVOC | (TIC) PHTHALIC ACID, DECYL ISOBUTYL ESTER | | | | | 1 | 35 | 0.16 | 0.16 | | | | |
| SL | SVOC | (TIC) PHTHALIC ACID, ISOHEXYL PENTYL ESTER | | | | | 1 | 35 | 0.68 | 0.68 | | | | |
| SL | SVOC | (TIC) PICEIN | | | | | 1 | 35 | 0.73 | 0.73 | | | | |
| SL | SVOC | (TIC) PREGNAN-3-ONE, (5.ALPHA.)- | | | | | 2 | 35 | 0.18 | 1 | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SL | SVOC | (TIC) PYRENE, 1-METHYL- | | | | | 4 | 35 | 0.12 | 9.8 | | | | |
| SL | SVOC | (TIC) PYRENE, 2-METHYL- | | | | | 2 | 35 | 1.1 | 1.3 | | | | |
| SL | SVOC | (TIC) PYRENE, 4-METHYL- | | | | | 1 | 35 | 8 | 8 | | | | |
| SL | SVOC | (TIC) PYRIDINE, 3-(PHENYLMETHYL)- | | | | | 1 | 35 | 0.88 | 0.88 | | | | |
| SL | SVOC | (TIC) SQUALENE | | | | | 1 | 35 | 1.3 | 1.3 | | | | |
| SL | SVOC | (TIC) STIGMAST-4-EN-3-ONE | | | | | 7 | 35 | 0.22 | 2.1 | | | | |
| SL | SVOC | (TIC) STIGMASTANOL | | | | | 1 | 35 | 2.8 | 2.8 | | | | |
| SL | SVOC | (TIC) STIGMASTEROL | | | | | 3 | 35 | 0.34 | 0.97 | | | | |
| SL | SVOC | (TIC) STIGMASTEROL, 22,23-DIHYDRO- | | | | | 1 | 35 | 3.3 | 3.3 | | | | |
| SL | SVOC | (TIC) SULFUROUS ACID, 2-ETHYLHEXYL HEXADECYLE | | | | | 1 | 35 | 0.24 | 0.24 | | | | |
| SL | SVOC | (TIC) SULFUROUS ACID, 2-ETHYLHEXYL PENTYL ESTE | | | | | 1 | 35 | 0.37 | 0.37 | | | | |
| SL | SVOC | (TIC) TETRACONTANE, 3,5,24-TRIMETHYL- | | | | | 1 | 35 | 0.57 | 0.57 | | | | |
| SL | SVOC | (TIC) TETRACOSANE | | | | | 1 | 35 | 0.49 | 0.49 | | | | |
| SL | SVOC | (TIC) TETRACOSANE, 11-DECYL- | | | | | 1 | 35 | 0.49 | 0.49 | | | | |
| SL | SVOC | (TIC) TETRADECANAMIDE | | | | | 3 | 35 | 0.14 | 0.8 | | | | |
| SL | SVOC | (TIC) TETRADECANE | | | | | 5 | 35 | 0.18 | 2.6 | | | | |
| SL | SVOC | (TIC) TETRADECANE, 1-CHLORO- | | | | | 1 | 35 | 0.18 | 0.18 | | | | |
| SL | SVOC | (TIC) TETRADECANE, 2,2-DIMETHYL- | | | | | 1 | 35 | 2.9 | 2.9 | | | | |
| SL | SVOC | (TIC) TETRADECANE, 2,6,10-TRIMETHYL- | | | | | 2 | 35 | 0.36 | 1.7 | | | | |
| SL | SVOC | (TIC) TETRAHYDROABIETIC ACID | | | | | 2 | 35 | 0.92 | 1 | | | | |
| SL | SVOC | (TIC) TETRATETRACONTANE | | | | | 10 | 35 | 0.23 | 1.5 | | | | |
| SL | SVOC | (TIC) TETRATRIACONTANE | | | | | 4 | 35 | 0.25 | 1.2 | 1 | 20 | 0.002 | 0.002 |
| SL | SVOC | (TIC) TOTAL ALKANES | | | | | | | | | 4 | 20 | 0.0021 | 0.0025 |
| SL | SVOC | (TIC) TOTAL ALKANES, FILTERED | | | | | | | | | 4 | 20 | 0.0022 | 0.0026 |
| SL | SVOC | (TIC) TRANS-1,10-DIMETHYL-TRANS-9-DECALOL | | | | | 1 | 35 | 0.55 | 0.55 | | | | |
| SL | SVOC | (TIC) TRANS-DECALIN, 2-METHYL- | | | | | 1 | 35 | 0.64 | 0.64 | | | | |
| SL | SVOC | (TIC) TRICHLOROACETIC ACID, HEXADECYL ESTER | | | | | 2 | 35 | 0.15 | 5.7 | | | | |
| SL | SVOC | (TIC) TRICOSANE | | | | | 1 | 35 | 1.5 | 1.5 | | | | |
| SL | SVOC | (TIC) TRIDECANE, 1-IODO- | | | | | 1 | 35 | 0.39 | 0.39 | | | | |
| SL | SVOC | (TIC) TRIDECANE, 3-METHYL- | | | | | 4 | 35 | 0.57 | 5.5 | | | | |
| SL | SVOC | (TIC) TRIDECANE, 5-PROPYL- | | | | | 1 | 35 | 0.21 | 0.21 | | | | |
| SL | SVOC | (TIC) TRIDECANOIC ACID | | | | | 1 | 35 | 2.9 | 2.9 | | | | |
| SL | SVOC | (TIC) UNDECANE, 3,8-DIMETHYL- | | | | | 2 | 35 | 0.84 | 2 | | | | |
| SL | SVOC | (TIC) UNDECANE, 4,6-DIMETHYL- | | | | | 1 | 35 | 1.6 | 1.6 | | | | |
| SL | SVOC | (TIC) UNKNOWN | | | | | 34 | 35 | 0.091 | 13 | 15 | 20 | 0.0025 | 0.027 |
| SL | SVOC | (TIC) UNKNOWN ALCOHOL | | | | | 4 | 35 | 0.15 | 1.6 | | | | |
| SL | SVOC | (TIC) UNKNOWN ALIPHATIC KETONE | | | | | 1 | 35 | 0.18 | 0.18 | | | | |
| SL | SVOC | (TIC) UNKNOWN ALKANE | | | | | 6 | 35 | 0.22 | 4.8 | | | | |
| SL | SVOC | (TIC) UNKNOWN AMIDE | | | | | 3 | 35 | 0.25 | 1.3 | | | | |
| SL | SVOC | (TIC) UNKNOWN CHOLESTANE DERIVATIVE | | | | | 1 | 35 | 0.64 | 0.64 | | | | |
| SL | SVOC | (TIC) UNKNOWN CYCLOALKANE | | | | | 6 | 35 | 0.17 | 1.7 | | | | |
| SL | SVOC | (TIC) UNKNOWN PAH | | | | | 4 | 35 | 1.9 | 14 | | | | |
| SL | SVOC | (TIC) UNKNOWN POLYTERPENE DERIVATIVE | | | | | 15 | 35 | 0.18 | 8.1 | | | | |
| SL | SVOC | (TIC) VITAMIN E | | | | | 1 | 35 | 0.54 | 0.54 | | | | |
| SL | VOC | (TIC) 1-ETHYL-3-METHYLCYCLOHEXANE (C,T) | | | | | 1 | 35 | 0.53 | 0.53 | | | | |
| SL | VOC | (TIC) 1H-INDENE, 2,3-DIHYDRO-1,1-DIMETHYL- | | | | | 1 | 35 | 0.026 | 0.026 | | | | |
| SL | VOC | (TIC) 1-METHYLDECAHYDRONAPHTHALENE | | | | | 1 | 35 | 0.033 | 0.033 | | | | |
| SL | VOC | (TIC) 1R-.ALPHA.-PINENE | | | | | 2 | 35 | 0.0089 | 0.022 | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| SL | VOC | (TIC) 1-TRIDECENE | | | | | 1 | 35 | 0.0092 | 0.0092 | | | | |
| SL | VOC | (TIC) 2-HEPTANONE, 6-METHYL- | | | | | 1 | 35 | 0.021 | 0.021 | | | | |
| SL | VOC | (TIC) 4,7-METHANOINDENE, 3A,4,5,6,7,7A-HEXAHYD | | | | | 1 | 35 | 0.021 | 0.021 | | | | |
| SL | VOC | (TIC) BENZENE, (1-METHYLPROPYL)- | | | | | 1 | 35 | 0.031 | 0.031 | | | | |
| SL | VOC | (TIC) CYCLOHEXENE, 4-METHYL-1-(1-METHYLETHYL)- | | | | | 2 | 35 | 0.0065 | 0.0076 | | | | |
| SL | VOC | (TIC) CYCLOTETRASILOXANE, OCTAMETHYL- | | | | | 7 | 35 | 0.0089 | 0.12 | | | | |
| SL | VOC | (TIC) CYCLOTRISILOXANE, HEXAMETHYL- | | | | | 1 | 35 | 0.064 | 0.064 | | | | |
| SL | VOC | (TIC) DECANAL | | | | | 1 | 35 | 0.026 | 0.026 | | | | |
| SL | VOC | (TIC) DIMETHYL SULFIDE | | | | | | | | | 1 | 18 | 0.00052 | 0.00052 |
| SL | VOC | (TIC) DIPHENYL ETHER | | | | | 4 | 35 | 0.016 | 0.37 | | | | |
| SL | VOC | (TIC) NAPHTHALENE, DECAHYDRO-2-METHYL- | | | | | 4 | 35 | 0.013 | 0.078 | | | | |
| SL | VOC | (TIC) SULFUR DIOXIDE | | | | | 2 | 35 | 0.023 | 0.03 | | | | |
| SL | VOC | (TIC) TRANS-DECALIN, 2-METHYL- | | | | | 6 | 35 | 0.011 | 0.13 | | | | |
| SL | VOC | (TIC) UNKNOWN | | | | | 35 | 35 | 0.062 | 0.78 | 18 | 18 | 0.0026 | 0.0038 |
| SL | VOC | (TIC) UNKNOWN ALKANE | | | | | 18 | 35 | 0.023 | 0.74 | | | | |
| SL | VOC | (TIC) UNKNOWN TERPENE | | | | | 1 | 35 | 0.0067 | 0.0067 | | | | |
| BWL | SVOC | (TIC) .ALPHA.-AMYRIN | | | | | 4 | 57 | 5.4 | 16 | | | | |
| BWL | SVOC | (TIC) .ALPHA.-PINENE | | | | | 1 | 57 | 2.6 | 2.6 | | | | |
| BWL | SVOC | (TIC) .ALPHA.-PINENE,(-)- | 2 | 21 | 1.8 | 2.1 | | | | | | | | |
| BWL | SVOC | (TIC) .BETA.-PHELLANDRENE | | | | | 1 | 57 | 29 | 29 | | | | |
| BWL | SVOC | (TIC) .BETA.-SELINENE | 1 | 21 | 0.35 | 0.35 | | | | | | | | |
| BWL | SVOC | (TIC) .GAMMA.-SITOSTEROL | | | | | 40 | 57 | 0.83 | 89 | | | | |
| BWL | SVOC | (TIC) .GAMMA.-TOCOPHEROL | 1 | 21 | 1.7 | 1.7 | | | | | | | | |
| BWL | SVOC | (TIC) 1,2,4-TRIMETHYLBENZENE | | | | | 1 | 57 | 0.4 | 0.4 | | | | |
| BWL | SVOC | (TIC) 1,2-BENZENEDICARBOXYLIC A | | | | | 1 | 57 | 4.8 | 4.8 | | | | |
| BWL | SVOC | (TIC) 1,3-BENZODIOXOLE, 5-(1-PROPENYL)-,(Z)- | 1 | 21 | 0.9 | 0.9 | | | | | | | | |
| BWL | SVOC | (TIC) 1,3-BENZODIOXOLE,5-(2-PROPENYL)- | 2 | 21 | 0.28 | 0.52 | | | | | | | | |
| BWL | SVOC | (TIC) 1,4-METHANONAPHTHALENE, 1 | | | | | 1 | 57 | 8.3 | 8.3 | | | | |
| BWL | SVOC | (TIC) 1,6,10-DODECATRIENE, 7,11 | | | | | 5 | 57 | 0.5 | 14 | | | | |
| BWL | SVOC | (TIC) 11H-BENZO[A]FLUORENE | | | | | 4 | 57 | 0.41 | 4.1 | | | | |
| BWL | SVOC | (TIC) 11H-BENZO[B]FLUORENE | | | | | 4 | 57 | 0.44 | 3.5 | | | | |
| BWL | SVOC | (TIC) 14-OCTADECENAL | | | | | 1 | 57 | 2.6 | 2.6 | | | | |
| BWL | SVOC | (TIC) 17-PENTATRIACONTENE | | | | | 1 | 57 | 22 | 22 | | | | |
| BWL | SVOC | (TIC) 1-DOTRIACONTANOL | | | | | 1 | 57 | 4.9 | 4.9 | | | | |
| BWL | SVOC | (TIC) 1-EICOSANOL | | | | | 2 | 57 | 7.9 | 10 | | | | |
| BWL | SVOC | (TIC) 1-EICOSYNE | | | | | 1 | 57 | 11 | 11 | | | | |
| BWL | SVOC | (TIC) 1H-CYCLOPROP[E]AZULEN-7-O | | | | | 1 | 57 | 5.6 | 5.6 | | | | |
| BWL | SVOC | (TIC) 1H-CYCLOPROP[E]AZULENE, 1 | | | | | 1 | 57 | 5.6 | 5.6 | | | | |
| BWL | SVOC | (TIC) 1-HEPTADECENE | | | | | 1 | 57 | 3.2 | 3.2 | | | | |
| BWL | SVOC | (TIC) 1-HEXADECANOL | | | | | 1 | 57 | 6.4 | 6.4 | | | | |
| BWL | SVOC | (TIC) 1-OCTADECENE | | | | | 3 | 57 | 2.7 | 6.1 | | | | |
| BWL | SVOC | (TIC) 1-PENTADECENE | | | | | 1 | 57 | 9.8 | 9.8 | | | | |
| BWL | SVOC | (TIC) 1-PHENANTHRENECARBOXYLIC | | | | | 1 | 57 | 130 | 130 | | | | |
| BWL | SVOC | (TIC) 1-PHENANTHRENECARBOXYLICACID,1,2,3,4,4 | 1 | 21 | 0.5 | 0.5 | | | | | | | | |
| BWL | SVOC | (TIC) 2,3-DIHYDRO-1-METHYLINDENE | | | | | 1 | 57 | 1.8 | 1.8 | | | | |
| BWL | SVOC | (TIC) 2,5-CYCLOHEXADIENE-1,4-DIONE, 2,6-BIS(1, | | | | | 1 | 57 | 1 | 1 | | | | |
| BWL | SVOC | (TIC) 2,6-DIMETHYL-6-NITRO-2-HE | | | | | 2 | 57 | 0.86 | 0.98 | | | | |
| BWL | SVOC | (TIC) 2-.BETA.-PINENE | 3 | 21 | 0.32 | 4.3 | | | | | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| BWL | SVOC | (TIC) 28-NOR-17.ALPHA.(H)-HOPAN | | | | | 3 | 57 | 1.8 | 2.6 | | | | |
| BWL | SVOC | (TIC) 2H-BENZOCYCLOHEPTEN-2-ONE | | | | | 1 | 57 | 2.2 | 2.2 | | | | |
| BWL | SVOC | (TIC) 2-HEXADECENE, 3,7,11,15-T | | | | | 1 | 57 | 0.92 | 0.92 | | | | |
| BWL | SVOC | (TIC) 2H-QUINOLIZINE, 4-(3-FURA | | | | | 1 | 57 | 2.4 | 2.4 | | | | |
| BWL | SVOC | (TIC) 2-NONADECANONE | | | | | 1 | 57 | 4 | 4 | | | | |
| BWL | SVOC | (TIC) 2-PENTANONE, 4-HYDROXY-4- | | | | | 48 | 57 | 41 | 960 | | | | |
| BWL | SVOC | (TIC) 2-PENTANONE, 4-HYDROXY-4-METHYL- | | | | | 9 | 57 | 13 | 78 | | | | |
| BWL | SVOC | (TIC) 3,4-DIHYDROCYCLOPENTA(CD) | | | | | 2 | 57 | 1.5 | 2.1 | | | | |
| BWL | SVOC | (TIC) 3-OCTANONE | | | | | 1 | 57 | 0.32 | 0.32 | | | | |
| BWL | SVOC | (TIC) 4H-CYCLOPENTA[DEF]PHENANT | | | | | 2 | 57 | 1.2 | 1.8 | | | | |
| BWL | SVOC | (TIC) 4H-CYCLOPENTA[DEF]PHENANTHRENE | | | | | 2 | 57 | 0.37 | 0.64 | | | | |
| BWL | SVOC | (TIC) 4-O-ACETYL-2,5-DI-O-METHY | | | | | 1 | 57 | 1.3 | 1.3 | | | | |
| BWL | SVOC | (TIC) 5,12-NAPHTHACENEDIONE | | | | | 1 | 57 | 1.2 | 1.2 | | | | |
| BWL | SVOC | (TIC) 7H-BENZ[DE]ANTHRACEN-7-ONE | | | | | 2 | 57 | 1.2 | 1.6 | | | | |
| BWL | SVOC | (TIC) 9,10-ANTHRACENEDIONE | | | | | 1 | 57 | 1.4 | 1.4 | | | | |
| BWL | SVOC | (TIC) 9-HEXADECENOIC ACID | | | | | 7 | 57 | 0.99 | 4.8 | | | | |
| BWL | SVOC | (TIC) ACETIC ACID, OCTADECYL ES | | | | | 1 | 57 | 3 | 3 | | | | |
| BWL | SVOC | (TIC) ALPHA-AMYRIN | | | | | 1 | 57 | 14 | 14 | | | | |
| BWL | SVOC | (TIC) ANTHRACENE, 1,4-DIMETHOXY | | | | | 1 | 57 | 1.6 | 1.6 | | | | |
| BWL | SVOC | (TIC) BENZ[A]ANTHRACENE, 12-MET | | | | | 1 | 57 | 2.2 | 2.2 | | | | |
| BWL | SVOC | (TIC) BENZ[A]ANTHRACENE, 5-METH | | | | | 1 | 57 | 1.4 | 1.4 | | | | |
| BWL | SVOC | (TIC) BENZENE, 1,2,4,5-TETRAMETHYL- | | | | | 2 | 57 | 1.3 | 2 | | | | |
| BWL | SVOC | (TIC) BENZENE, 1,2-DIETHYL- | | | | | 1 | 57 | 1.4 | 1.4 | | | | |
| BWL | SVOC | (TIC) BENZENE, 1,3-DIETHYL- | | | | | 2 | 57 | 0.18 | 1.4 | | | | |
| BWL | SVOC | (TIC) BENZENE, 1-ETHYL-2,3-DIMETHYL- | | | | | 2 | 57 | 1.3 | 3.2 | | | | |
| BWL | SVOC | (TIC) BENZENE, 1-ETHYL-2,4-DIMETHYL- | | | | | 1 | 57 | 1.8 | 1.8 | | | | |
| BWL | SVOC | (TIC) BENZENE, 2-ETHYL-1,3-DIMETHYL- | | | | | 2 | 57 | 1.2 | 2.9 | | | | |
| BWL | SVOC | (TIC) BENZENE, ETHOXY- | | | | | 1 | 57 | 1.1 | 1.1 | | | | |
| BWL | SVOC | (TIC) BENZENE, PROPYL- | | | | | 2 | 57 | 0.47 | 0.9 | | | | |
| BWL | SVOC | (TIC) BENZENEACETICACID | 2 | 21 | 0.14 | 2.9 | | | | | | | | |
| BWL | SVOC | (TIC) BENZO(A)ACRIDINE | | | | | 1 | 57 | 1.1 | 1.1 | | | | |
| BWL | SVOC | (TIC) BENZO(K)FLUORANTHENE | | | | | 1 | 57 | 2.8 | 2.8 | | | | |
| BWL | SVOC | (TIC) BENZO[B]NAPHTHO[2,1-D]THI | | | | | 2 | 57 | 1.4 | 2.7 | | | | |
| BWL | SVOC | (TIC) BENZO[B]NAPHTHO[2,1-D]THIOPHENE | | | | | 1 | 57 | 0.66 | 0.66 | | | | |
| BWL | SVOC | (TIC) BENZO[B]NAPHTHO[2,3-D]FUR | | | | | 1 | 57 | 1.1 | 1.1 | | | | |
| BWL | SVOC | (TIC) BENZO[B]NAPHTHO[2,3-D]THI | | | | | 1 | 57 | 1.4 | 1.4 | | | | |
| BWL | SVOC | (TIC) BENZO[C]PHENANTHRENE | | | | | 2 | 57 | 1.7 | 1.8 | | | | |
| BWL | SVOC | (TIC) BENZO[E]PYRENE | | | | | 18 | 57 | 0.96 | 7.8 | | | | |
| BWL | SVOC | (TIC) BENZO[GHI]FLUORANTHENE | | | | | 1 | 57 | 1.8 | 1.8 | | | | |
| BWL | SVOC | (TIC) BICYCLO[2.2.1]HEPTAN-2-ON | | | | | 1 | 57 | 0.97 | 0.97 | | | | |
| BWL | SVOC | (TIC) BICYCLO[3.1.0]HEXANE, 4-M | | | | | 1 | 57 | 70 | 70 | | | | |
| BWL | SVOC | (TIC) BICYCLO[3.1.1]HEPT-2-ENE, | | | | | 1 | 57 | 52 | 52 | | | | |
| BWL | SVOC | (TIC) BICYCLO[4.1.0]HEPTANE, 3, | | | | | 1 | 57 | 3.3 | 3.3 | | | | |
| BWL | SVOC | (TIC) C20H42ALKANE | 1 | 21 | 0.25 | 0.25 | | | | | | | | |
| BWL | SVOC | (TIC) CAMPHENE | | | | | 1 | 57 | 8.2 | 8.2 | | | | |
| BWL | SVOC | (TIC) CARYOPHYLLENE | | | | | 1 | 57 | 1.3 | 1.3 | | | | |
| BWL | SVOC | (TIC) CHOLESTAN-3-ONE, 4,4-DIMETHYL-, (5.ALPHA | | | | | 1 | 57 | 9.3 | 9.3 | | | | |
| BWL | SVOC | (TIC) CHOLESTANE, 3-ETHOXY-, (3 | | | | | 1 | 57 | 23 | 23 | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| BWL | SVOC | (TIC) CHOLESTANE, 4,5-EPOXY-, ( | | | | | 1 | 57 | 4.5 | 4.5 | | | | |
| BWL | SVOC | (TIC) CHOLESTANOL | | | | | 7 | 57 | 0.93 | 6.7 | | | | |
| BWL | SVOC | (TIC) CHOLESTEROL | | | | | 10 | 57 | 1.4 | 5.7 | | | | |
| BWL | SVOC | (TIC) CHRYSENE, 1-METHYL- | | | | | 1 | 57 | 1.8 | 1.8 | | | | |
| BWL | SVOC | (TIC) CHRYSENE, 3-METHYL- | | | | | 1 | 57 | 1.2 | 1.2 | | | | |
| BWL | SVOC | (TIC) COPROSTAN-3-ONE | | | | | 1 | 57 | 3.9 | 3.9 | | | | |
| BWL | SVOC | (TIC) CYCLOHEXANE, 1-METHYL-4-( | | | | | 1 | 57 | 87 | 87 | | | | |
| BWL | SVOC | (TIC) CYCLOHEXENE, 1-METHYL-4-( | | | | | 18 | 57 | 0.66 | 36 | | | | |
| BWL | SVOC | (TIC) CYCLOHEXENE, 1-METHYL-4-(5-METHYL-1-METH | | | | | 1 | 57 | 2 | 2 | | | | |
| BWL | SVOC | (TIC) CYCLOPENTA[CD]PYRENE | | | | | 2 | 57 | 1.9 | 3 | | | | |
| BWL | SVOC | (TIC) D:B-FRIEDO-B-A-NEOGAMMACER-5-EN-3-OL, | | | | | 1 | 57 | 13 | 13 | | | | |
| BWL | SVOC | (TIC) D:C-FRIEDOOLEAN-8-EN-3-ON | | | | | 2 | 57 | 35 | 42 | | | | |
| BWL | SVOC | (TIC) D:C-FRIEDOOLEANAN-3-ONE | | | | | 9 | 57 | 5.6 | 44 | | | | |
| BWL | SVOC | (TIC) D_B-FRIEDO-B_A-NEOGAMMA | | | | | 1 | 57 | 7.7 | 7.7 | | | | |
| BWL | SVOC | (TIC) D-FRIEDOOLEAN-14-EN-3-ONE | | | | | 13 | 57 | 3.6 | 40 | | | | |
| BWL | SVOC | (TIC) D-HOMOANDROSTANE, (5.ALPH | | | | | 4 | 57 | 4.8 | 19 | | | | |
| BWL | SVOC | (TIC) DIMETHYLETHYLPHENOLISOMER | | | | | | | | | 1 | 6 | 0.0078 | 0.0078 |
| BWL | SVOC | (TIC) DODECANOIC ACID | | | | | 1 | 57 | 1.3 | 1.3 | | | | |
| BWL | SVOC | (TIC) EPICHOLESTANOL | | | | | 1 | 57 | 5.3 | 5.3 | | | | |
| BWL | SVOC | (TIC) ERGOST-5-EN-3-OL, (3.BETA | | | | | 17 | 57 | 1.6 | 14 | | | | |
| BWL | SVOC | (TIC) ERGOST-5-EN-3-OL, (3.BETA.)- | | | | | 1 | 57 | 5.8 | 5.8 | | | | |
| BWL | SVOC | (TIC) ERGOST-7-EN-3-OL, (3.BETA.)- | | | | | 1 | 57 | 14 | 14 | | | | |
| BWL | SVOC | (TIC) ERGOSTANE-3,12-DIOL, (3.A | | | | | 1 | 57 | 9 | 9 | | | | |
| BWL | SVOC | (TIC) ERGOSTANOL | | | | | 3 | 57 | 7.2 | 17 | | | | |
| BWL | SVOC | (TIC) EUCALYPTOL | | | | | 6 | 57 | 1.1 | 1.4 | | | | |
| BWL | SVOC | (TIC) GAMMA-SITOSTEROL | | | | | 6 | 57 | 10 | 70 | | | | |
| BWL | SVOC | (TIC) HEXADECANOIC ACID | | | | | 13 | 57 | 0.58 | 8.9 | | | | |
| BWL | SVOC | (TIC) HEXADECANOICACID | 1 | 21 | 1.1 | 1.1 | | | | | | | | |
| BWL | SVOC | (TIC) INDAN, 1-METHYL- | | | | | 1 | 57 | 1.9 | 1.9 | | | | |
| BWL | SVOC | (TIC) INDANE | | | | | 2 | 57 | 2.2 | 2.4 | | | | |
| BWL | SVOC | (TIC) ISOBORNYL ACETATE | | | | | 1 | 57 | 2.4 | 2.4 | | | | |
| BWL | SVOC | (TIC) KAUR-16-ENE, (8.BETA.,13. | | | | | 1 | 57 | 1.6 | 1.6 | | | | |
| BWL | SVOC | (TIC) LIMONENE | | | | | 1 | 57 | 1 | 1 | | | | |
| BWL | SVOC | (TIC) L-LIMONENE | 2 | 21 | 0.3 | 0.44 | | | | | | | | |
| BWL | SVOC | (TIC) LUP-20(29)-EN-3-ONE | | | | | 3 | 57 | 2.2 | 48 | | | | |
| BWL | SVOC | (TIC) LUPEOL | | | | | 8 | 57 | 7.3 | 53 | | | | |
| BWL | SVOC | (TIC) NAPHTHALENE, 1,2,3,4-TETR | | | | | 3 | 57 | 0.92 | 3.8 | | | | |
| BWL | SVOC | (TIC) NAPHTHALENE, 1,2,3,5,6,8A | | | | | 1 | 57 | 5.1 | 5.1 | | | | |
| BWL | SVOC | (TIC) NAPHTHALENE, 1,2,3,5,6,8A-HEXAHYDRO-4,7- | | | | | 1 | 57 | 1.2 | 1.2 | | | | |
| BWL | SVOC | (TIC) OCTADECANAL | | | | | 1 | 57 | 6.4 | 6.4 | | | | |
| BWL | SVOC | (TIC) OCTADECANE | | | | | 1 | 57 | 0.24 | 0.24 | | | | |
| BWL | SVOC | (TIC) OLEAN-12-ENE | | | | | 1 | 57 | 4.4 | 4.4 | | | | |
| BWL | SVOC | (TIC) OXIRANE, [(DODECYLOXY)MET | | | | | 1 | 57 | 10 | 10 | | | | |
| BWL | SVOC | (TIC) PERYLENE | | | | | 7 | 57 | 1.1 | 2.5 | | | | |
| BWL | SVOC | (TIC) PHENANTHRENE, 1-METHYL-7- | | | | | 3 | 57 | 2.9 | 3.8 | | | | |
| BWL | SVOC | (TIC) PHENANTHRENE, 2,4,5,7-TET | | | | | 5 | 57 | 1.5 | 26 | | | | |
| BWL | SVOC | (TIC) PHENANTHRENE, 2,4,5,7-TETRAMETHYL- | | | | | 1 | 57 | 0.45 | 0.45 | | | | |
| BWL | SVOC | (TIC) PHENANTHRENE, 3,4,5,6-TETRAMETHYL- | | | | | 1 | 57 | 0.83 | 0.83 | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| BWL | SVOC | (TIC) PHENOL, 4-(1,1,3,3-TETRAM | | | | | 1 | 57 | 2.5 | 2.5 | | | | |
| BWL | SVOC | (TIC) PHENOL, 4-(1,1,3,3-TETRAMETHYLBUTYL)- | | | | | 2 | 57 | 0.36 | 7.9 | | | | |
| BWL | SVOC | (TIC) PHENOL, 4-(1,1-DIMETHYLPROPYL)- | | | | | 1 | 57 | 1.6 | 1.6 | | | | |
| BWL | SVOC | (TIC) PHENOL, 4-(2,2,4-TRIMETHY | | | | | 1 | 57 | 49 | 49 | | | | |
| BWL | SVOC | (TIC) PHENOL, 4-(2,2,4-TRIMETHYLPENTYL)- | | | | | 1 | 57 | 16 | 16 | | | | |
| BWL | SVOC | (TIC) PHENOL, M-TERT-BUTYL- | | | | | 1 | 57 | 14 | 14 | | | | |
| BWL | SVOC | (TIC) PHENOL, P-TERT-BUTYL- | | | | | 6 | 57 | 5.5 | 24 | | | | |
| BWL | SVOC | (TIC) PHYTOL | | | | | 3 | 57 | 0.82 | 2.6 | | | | |
| BWL | SVOC | (TIC) PREGNAN-20-ONE, 3-(ACETYL | | | | | 1 | 57 | 11 | 11 | | | | |
| BWL | SVOC | (TIC) PREGNAN-3.ALPHA.-OL-20-ON | | | | | 1 | 57 | 6.8 | 6.8 | | | | |
| BWL | SVOC | (TIC) PROPANEDIOIC ACID, PHENYL | | | | | 1 | 57 | 1.6 | 1.6 | | | | |
| BWL | SVOC | (TIC) PYRENE, 1-METHYL- | | | | | 1 | 57 | 1.5 | 1.5 | | | | |
| BWL | SVOC | (TIC) PYRENE, 2-METHYL- | | | | | 2 | 57 | 1.4 | 2 | | | | |
| BWL | SVOC | (TIC) PYRENE, 4-METHYL- | | | | | 1 | 57 | 2 | 2 | | | | |
| BWL | SVOC | (TIC) STIGMAST-4-EN-3-ONE | 3 | 21 | 0.51 | 1.5 | 5 | 57 | 0.42 | 18 | | | | |
| BWL | SVOC | (TIC) STIGMASTEROL | | | | | 23 | 57 | 0.87 | 24 | | | | |
| BWL | SVOC | (TIC) SULFUR, MOL. (S8) | | | | | 3 | 57 | 0.1 | 2.1 | | | | |
| BWL | SVOC | (TIC) TARAXASTEROL | | | | | 1 | 57 | 5.9 | 5.9 | | | | |
| BWL | SVOC | (TIC) TARAXEROL | | | | | 17 | 57 | 0.9 | 31 | | | | |
| BWL | SVOC | (TIC) TESTOSTERONE | | | | | 2 | 57 | 2.4 | 3 | | | | |
| BWL | SVOC | (TIC) TETRADECANOIC ACID | | | | | 4 | 57 | 0.93 | 3.3 | | | | |
| BWL | SVOC | (TIC) TOTAL ALKANES | | | | | | | | | 2 | 6 | 1.1E-07 | 0.0058 |
| BWL | SVOC | (TIC) TRICYCLO[2.2.1.02,6]HEPTA | | | | | 1 | 57 | 1.1 | 1.1 | | | | |
| BWL | SVOC | (TIC) TRIPHENYLENE, 2-METHYL- | | | | | 1 | 57 | 0.38 | 0.38 | | | | |
| BWL | SVOC | (TIC) UNKNOWN | 21 | 21 | 0.39 | 20 | 57 | 57 | 0.2 | 71 | 5 | 6 | 0 | 0.012 |
| BWL | SVOC | (TIC) UNKNOWN ALCOHOL | | | | | 50 | 57 | 0.081 | 73 | | | | |
| BWL | SVOC | (TIC) UNKNOWN ALIPHATIC ALDEHYDE | | | | | 17 | 57 | 0.64 | 12 | | | | |
| BWL | SVOC | (TIC) UNKNOWN ALIPHATIC COMPOUND | | | | | 39 | 57 | 0.26 | 12 | | | | |
| BWL | SVOC | (TIC) UNKNOWN ALIPHATIC ESTER | | | | | 1 | 57 | 0.86 | 0.86 | | | | |
| BWL | SVOC | (TIC) UNKNOWN ALIPHATIC KETONE | | | | | 24 | 57 | 0.8 | 7.8 | | | | |
| BWL | SVOC | (TIC) UNKNOWN ALKANE | | | | | 57 | 57 | 0.26 | 200 | 1 | 6 | 0.0034 | 0.0034 |
| BWL | SVOC | (TIC) UNKNOWN ALKENE | | | | | 48 | 57 | 1.5 | 120 | | | | |
| BWL | SVOC | (TIC) UNKNOWN AMIDE | 5 | 21 | 0.45 | 1.3 | | | | | | | | |
| BWL | SVOC | (TIC) UNKNOWN AROMATIC COMPOUND | | | | | 6 | 57 | 0.34 | 14 | | | | |
| BWL | SVOC | (TIC) UNKNOWN BENZOFLUORENE | | | | | 2 | 57 | 1.4 | 1.6 | | | | |
| BWL | SVOC | (TIC) UNKNOWN BIPHENYL | 1 | 21 | 1.9 | 1.9 | | | | | | | | |
| BWL | SVOC | (TIC) UNKNOWN BRANCHED ALKANE | 5 | 21 | 0.12 | 0.61 | | | | | | | | |
| BWL | SVOC | (TIC) UNKNOWN C4-ALKYLBENZENE | | | | | 1 | 57 | 56 | 56 | | | | |
| BWL | SVOC | (TIC) UNKNOWN CYCLOALKANE | 3 | 21 | 0.15 | 2.7 | 4 | 57 | 0.67 | 3 | | | | |
| BWL | SVOC | (TIC) UNKNOWN NAPHTHALENE DERIV | | | | | 1 | 57 | 9.7 | 9.7 | | | | |
| BWL | SVOC | (TIC) UNKNOWN NAPHTHALENE DERIVATIVE | | | | | 1 | 57 | 1.6 | 1.6 | | | | |
| BWL | SVOC | (TIC) UNKNOWN ORGANIC ACID | 3 | 21 | 0.085 | 0.47 | | | | | | | | |
| BWL | SVOC | (TIC) UNKNOWN OXIRANE | 9 | 21 | 0.24 | 3.1 | 1 | 57 | 2.3 | 2.3 | | | | |
| BWL | SVOC | (TIC) UNKNOWN PAH | 1 | 21 | 0.43 | 0.43 | 5 | 57 | 1.1 | 5.9 | | | | |
| BWL | SVOC | (TIC) UNKNOWN POLYCYCLIC HYDROCARBON | | | | | 22 | 57 | 0.55 | 14 | | | | |
| BWL | SVOC | (TIC) UNKNOWN POLYTERPENE DERIVATIVE | | | | | 57 | 57 | 0.18 | 60 | | | | |
| BWL | SVOC | (TIC) UNKNOWN STRAIGHT CHAIN ALKANE | 11 | 21 | 0.19 | 3.7 | | | | | | | | |
| BWL | SVOC | (TIC) UNKNOWN SUBSTITUTED PHENOL | 1 | 21 | 0.23 | 0.23 | | | | | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| BWL | SVOC | (TIC) UNKNOWN SUBSTITUTED PROPENE | 1 | 21 | 0.12 | 0.12 | | | | | | | | |
| BWL | SVOC | (TIC) UNKNOWNALDEHYDE | 1 | 21 | 0.26 | 0.26 | | | | | | | | |
| BWL | SVOC | (TIC) UNKNOWNALDOLCONDENSATE | 10 | 21 | 3.2 | 11 | | | | | | | | |
| BWL | SVOC | (TIC) UNKNOWNALKANE | 5 | 21 | 0.32 | 0.83 | | | | | | | | |
| BWL | SVOC | (TIC) UNKNOWNMETHYLESTER | 1 | 21 | 0.52 | 0.52 | | | | | | | | |
| BWL | SVOC | (TIC) UNKNOWNORGANICACID | 2 | 21 | 0.12 | 0.63 | | | | | | | | |
| BWL | SVOC | (TIC) UNKNOWNSTEROL | 4 | 21 | 1.2 | 3.4 | | | | | | | | |
| BWL | SVOC | (TIC) VITAMIN E | | | | | 14 | 57 | 1.3 | 16 | | | | |
| BWL | VOC | (TIC) 1,2,4-TRIMETHYLBENZENE | | | | | 1 | 47 | 0.025 | 0.025 | | | | |
| BWL | VOC | (TIC) 1H-INDENE, 2,3-DIHYDRO-1,3-DIMETHYL- | | | | | 1 | 47 | 0.24 | 0.24 | | | | |
| BWL | VOC | (TIC) 2,3-DIHYDRO-1-METHYLINDENE | | | | | 1 | 47 | 0.34 | 0.34 | | | | |
| BWL | VOC | (TIC) BENZENE, 1,2-DIETHYL- | | | | | 1 | 47 | 0.084 | 0.084 | | | | |
| BWL | VOC | (TIC) BENZENE, 1-METHYL-4-(1-METHYLETHYL)- | | | | | 1 | 47 | 0.47 | 0.47 | | | | |
| BWL | VOC | (TIC) BENZENE, 1-METHYL-4-PROPY | | | | | 1 | 47 | 0.092 | 0.092 | | | | |
| BWL | VOC | (TIC) BENZENE, 2-BUTENYL- | | | | | 1 | 47 | 0.19 | 0.19 | | | | |
| BWL | VOC | (TIC) BENZENE, TERT-BUTYL- | | | | | 1 | 47 | 0.22 | 0.22 | | | | |
| BWL | VOC | (TIC) BENZENEACETALDEHYDE, .ALPHA.-METHYL- | | | | | 1 | 47 | 0.19 | 0.19 | | | | |
| BWL | VOC | (TIC) BICYCLO[2.2.1]HEPTAN-2-ONE,1,7,7-TRIMET | 1 | 3 | 0.37 | 0.37 | | | | | | | | |
| BWL | VOC | (TIC) C10H16UNKNOWN | 2 | 3 | 0.052 | 0.073 | | | | | | | | |
| BWL | VOC | (TIC) CAMPHENE | | | | | 1 | 47 | 0.45 | 0.45 | | | | |
| BWL | VOC | (TIC) CAMPHOR | | | | | 1 | 47 | 0.13 | 0.13 | | | | |
| BWL | VOC | (TIC) CYCLOHEXANE, 1,2-DIMETHYL-, TRANS- | | | | | 1 | 47 | 0.085 | 0.085 | | | | |
| BWL | VOC | (TIC) CYCLOPENTANE, 1,3-DIMETHYL- | | | | | 1 | 47 | 0.16 | 0.16 | | | | |
| BWL | VOC | (TIC) DIMETHYL SULFIDE | | | | | 2 | 47 | 0.14 | 2.4 | | | | |
| BWL | VOC | (TIC) D-LIMONENE | | | | | 2 | 47 | 0.14 | 0.27 | | | | |
| BWL | VOC | (TIC) EUCALYPTOL | 1 | 3 | 0.25 | 0.25 | | | | | | | | |
| BWL | VOC | (TIC) HEXANE | | | | | 1 | 47 | 0.26 | 0.26 | | | | |
| BWL | VOC | (TIC) LIMONENE | | | | | 1 | 47 | 0.54 | 0.54 | | | | |
| BWL | VOC | (TIC) METHANE, DIBROMO- | | | | | 10 | 47 | 0.01 | 0.3 | | | | |
| BWL | VOC | (TIC) NAPHTHALENE, DECAHYDRO-2-METHYL- | | | | | 1 | 47 | 0.025 | 0.025 | | | | |
| BWL | VOC | (TIC) PENTALENE, OCTAHYDRO- | | | | | 1 | 47 | 0.1 | 0.1 | | | | |
| BWL | VOC | (TIC) PENTALENE, OCTAHYDRO-2-METHYL- | | | | | 1 | 47 | 0.056 | 0.056 | | | | |
| BWL | VOC | (TIC) PROPENYLBENZODIOXOLEISOMER | 1 | 3 | 1.2 | 1.2 | | | | | | | | |
| BWL | VOC | (TIC) PULEGONE | | | | | 1 | 47 | 0.02 | 0.02 | | | | |
| BWL | VOC | (TIC) TOTAL ALKANES | | | | | | | | | 2 | 2 | 1E-10 | 1E-10 |
| BWL | VOC | (TIC) UNKNOWN | 2 | 3 | 0.0072 | 0.013 | 31 | 47 | 0.014 | 0.9 | 2 | 2 | 0.0027 | 0.0027 |
| BWL | VOC | (TIC) UNKNOWN ALKANE | | | | | 33 | 47 | 0.011 | 0.74 | | | | |
| BWL | VOC | (TIC) UNKNOWN AROMATIC COMPOUND | | | | | 3 | 47 | 0.37 | 1.6 | | | | |
| BWL | VOC | (TIC) UNKNOWN C3-ALKYLBENZENE | | | | | 3 | 47 | 0.12 | 0.27 | | | | |
| BWL | VOC | (TIC) UNKNOWN C4-ALKYLBENZENE | | | | | 4 | 47 | 0.12 | 0.73 | | | | |
| BWL | VOC | (TIC) UNKNOWN CYCLOALKANE | | | | | 7 | 47 | 0.019 | 0.27 | | | | |
| BWL | VOC | (TIC) UNKNOWN SILOXANE DERIVATIVE | | | | | 13 | 47 | 0.022 | 0.27 | | | | |
| BWL | VOC | (TIC) UNKNOWN TERPENE | | | | | 3 | 47 | 0.021 | 0.32 | | | | |
| HC | SVOC | (TIC) (-)-.BETA.-ELEMENE | 1 | 300 | 0.91 | 0.91 | | | | | | | | |
| HC | SVOC | (TIC) (-)-.BETA.-PINENE | 2 | 300 | 0.97 | 2.7 | | | | | | | | |
| HC | SVOC | (TIC) (+)-CYCLOISOATIVENE | 4 | 300 | 0.084 | 1.8 | | | | | | | | |
| HC | SVOC | (TIC) (+)-EPI-BICYCLOSESQUIPHELLANDRENE | 1 | 300 | 0.47 | 0.47 | | | | | | | | |
| HC | SVOC | (TIC) (3.BETA.,5.BETA.)-CHOLESTAN- | 1 | 300 | 38 | 38 | | | | | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| HC | SVOC | (TIC) (5.BETA.)-CHLOESTAN-3-ONE | 1 | 300 | 2.1 | 2.1 | | | | | | | | |
| HC | SVOC | (TIC) (5.BETA.)-CHOLESTAN-3-ONE | 3 | 300 | 2.4 | 57 | | | | | | | | |
| HC | SVOC | (TIC) (E)-5-EICOSENE | 1 | 300 | 1.1 | 1.1 | | | | | | | | |
| HC | SVOC | (TIC) (E)-9-EICOSENE | 1 | 300 | 1.4 | 1.4 | | | | | | | | |
| HC | SVOC | (TIC) (Z)-13-DOCOSENAMIDE | 1 | 300 | 0.97 | 0.97 | | | | | | | | |
| HC | SVOC | (TIC) (Z)14-TRICOSENYL FORMATE | | | | | 3 | 136 | 0.23 | 1.4 | | | | |
| HC | SVOC | (TIC) (Z,Z)-9,12-OCTADECADIENOIC A | 1 | 300 | 0.17 | 0.17 | | | | | | | | |
| HC | SVOC | (TIC) .ALPHA.-AMYRIN | | | | | 1 | 136 | 3.8 | 3.8 | | | | |
| HC | SVOC | (TIC) .ALPHA.-COPAENE | 3 | 300 | 0.9 | 3.4 | | | | | | | | |
| HC | SVOC | (TIC) .ALPHA.-CUBEBENE | 2 | 300 | 0.27 | 2.2 | | | | | | | | |
| HC | SVOC | (TIC) .ALPHA.-FENCHENE | 1 | 300 | 0.23 | 0.23 | | | | | | | | |
| HC | SVOC | (TIC) .ALPHA.-HUMULENE | 1 | 300 | 2.9 | 2.9 | | | | | | | | |
| HC | SVOC | (TIC) .ALPHA.-METHYLSTYRENE | | | | | 1 | 136 | 0.99 | 0.99 | | | | |
| HC | SVOC | (TIC) .ALPHA.-MUUROLENE | 2 | 300 | 0.15 | 9.5 | | | | | | | | |
| HC | SVOC | (TIC) .ALPHA.-MUUROLENE-(-) | 1 | 300 | 0.48 | 0.48 | | | | | | | | |
| HC | SVOC | (TIC) .ALPHA.-PINENE | | | | | 4 | 136 | 0.12 | 0.95 | | | | |
| HC | SVOC | (TIC) .ALPHA.-PINENE,(-)- | 11 | 300 | 0.082 | 5.7 | | | | | | | | |
| HC | SVOC | (TIC) .BETA. SITOSTEROL | 2 | 300 | 0.58 | 1.3 | | | | | | | | |
| HC | SVOC | (TIC) .BETA.-AMYRIN | 1 | 300 | 3.1 | 3.1 | 9 | 136 | 0.99 | 24 | | | | |
| HC | SVOC | (TIC) .BETA.-AMYRIN TRIMETHYLSILYL ETHER | | | | | 1 | 136 | 0.55 | 0.55 | | | | |
| HC | SVOC | (TIC) .BETA.-CUBEBENE | 6 | 300 | 0.096 | 4.8 | | | | | | | | |
| HC | SVOC | (TIC) .BETA.-HUMULENE | 1 | 300 | 0.7 | 0.7 | | | | | | | | |
| HC | SVOC | (TIC) .BETA.-MAALIENE | 1 | 300 | 0.083 | 0.083 | | | | | | | | |
| HC | SVOC | (TIC) .BETA.-PINENE | 1 | 300 | 2.5 | 2.5 | | | | | | | | |
| HC | SVOC | (TIC) .BETA.SITOSTEROL | 3 | 300 | 0.73 | 1.6 | | | | | | | | |
| HC | SVOC | (TIC) .BETA.-SITOSTEROL | 12 | 300 | 0.13 | 33 | 4 | 136 | 2.2 | 6.4 | | | | |
| HC | SVOC | (TIC) .DELTA.3-CARENE | 2 | 300 | 0.69 | 0.75 | | | | | | | | |
| HC | SVOC | (TIC) .DELTA.-CADINENE | 4 | 300 | 0.1 | 13 | | | | | | | | |
| HC | SVOC | (TIC) .DELTA.-CADINOL | 1 | 300 | 0.42 | 0.42 | | | | | | | | |
| HC | SVOC | (TIC) .GAMMA.-CADINENE | 1 | 300 | 1.5 | 1.5 | | | | | | | | |
| HC | SVOC | (TIC) .GAMMA.-ERGOSTENOL | | | | | 1 | 136 | 4 | 4 | | | | |
| HC | SVOC | (TIC) .GAMMA.SITOSTEROL | 3 | 300 | 1.2 | 5 | | | | | | | | |
| HC | SVOC | (TIC) .GAMMA.-SITOSTEROL | 44 | 300 | 0.31 | 36 | 105 | 136 | 0.52 | 58 | | | | |
| HC | SVOC | (TIC) [3,4:9,10]DIBENZPYRENE | | | | | 1 | 136 | 0.85 | 0.85 | | | | |
| HC | SVOC | (TIC) 1,1,2,1-TERPHENYL | | | | | 1 | 136 | 1.8 | 1.8 | | | | |
| HC | SVOC | (TIC) 1,1,3,1,3,1-QUATERPHENYL | | | | | 1 | 136 | 2.8 | 2.8 | | | | |
| HC | SVOC | (TIC) 1,1:2,1:3,1-QUATERPHENYL | | | | | 1 | 136 | 0.95 | 0.95 | | | | |
| HC | SVOC | (TIC) 1,1:2,1:4,1-QUATERPHENYL | | | | | 2 | 136 | 0.53 | 1.8 | | | | |
| HC | SVOC | (TIC) 1,1:2,1-TERPHENYL, 4-PHENYL- | | | | | 1 | 136 | 7.1 | 7.1 | | | | |
| HC | SVOC | (TIC) 1,1:3,1-TERPHENYL, 5-PHENYL- | | | | | 1 | 136 | 4.6 | 4.6 | | | | |
| HC | SVOC | (TIC) 1,13-TETRADECADIENE | | | | | 1 | 136 | 1.4 | 1.4 | | | | |
| HC | SVOC | (TIC) 1,19-EICOSADIENE | 1 | 300 | 3.2 | 3.2 | | | | | | | | |
| HC | SVOC | (TIC) 1,1-BIPHENYL-2-AZIDO | 1 | 300 | 1 | 1 | | | | | | | | |
| HC | SVOC | (TIC) 1,2,4-METHENO-1H-INDENE,OCTAHYDRO-1,7A- | 1 | 300 | 0.51 | 0.51 | | | | | | | | |
| HC | SVOC | (TIC) 1,2,4-TRIMETHYLBENZENE | | | | | 2 | 136 | 0.81 | 1.2 | | | | |
| HC | SVOC | (TIC) 1,2:7,8-DIBENZOPHENANTHRENE | 1 | 300 | 0.44 | 0.44 | | | | | | | | |
| HC | SVOC | (TIC) 1,22-DOCOSANEDIOL | 1 | 300 | 3.5 | 3.5 | | | | | | | | |
| HC | SVOC | (TIC) 1,2-BENZENEDICARBOXYLIC ACID, 3-NITRO- | | | | | 3 | 136 | 2.5 | 3.1 | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| HC | SVOC | (TIC) 1,2-BENZENEDICARBOXYLIC ACID, BIS(2-METH | | | | | 1 | 136 | 11 | 11 | | | | |
| HC | SVOC | (TIC) 1,2-DICHLOROBENZENE-D4 | | | | | 1 | 136 | 1.6 | 1.6 | | | | |
| HC | SVOC | (TIC) 1,3-BENZODIOXOLE, 5-(1-PROPENYL)- | 2 | 300 | 0.55 | 5.7 | | | | | | | | |
| HC | SVOC | (TIC) 1,3-BENZODIOXOLE,5-(1-PROPENYL)-,(Z)- | 1 | 300 | 0.099 | 0.099 | | | | | | | | |
| HC | SVOC | (TIC) 1,3-BENZODIOXOLE,5-(2-PROPENYL)- | 19 | 300 | 0.12 | 18 | | | | | | | | |
| HC | SVOC | (TIC) 1,3-BIS(TRIMETHYLSILOXY)BENZENE | | | | | 1 | 136 | 3.1 | 3.1 | | | | |
| HC | SVOC | (TIC) 1,4-DICHLOROBENZENE-D4 | | | | | 1 | 136 | 3.5 | 3.5 | | | | |
| HC | SVOC | (TIC) 1,4-NAPHTHALENEDIONE,5-HYDROXY- | 4 | 300 | 0.11 | 1.4 | | | | | | | | |
| HC | SVOC | (TIC) 1,4-NAPHTHOQUINONE, 2-ACETYL-3,8-DIHYDRO | | | | | 1 | 136 | 0.95 | 0.95 | | | | |
| HC | SVOC | (TIC) 11H-BENZO[A]FLUORENE | | | | | 20 | 136 | 0.16 | 1.7 | | | | |
| HC | SVOC | (TIC) 11H-BENZO[B]FLUORENE | | | | | 20 | 136 | 0.14 | 2 | | | | |
| HC | SVOC | (TIC) 13-TETRADECEN-1-OL ACETATE | 3 | 300 | 0.77 | 1.5 | | | | | | | | |
| HC | SVOC | (TIC) 14-OCTADECENAL | 1 | 300 | 0.53 | 0.53 | 1 | 136 | 0.1 | 0.1 | | | | |
| HC | SVOC | (TIC) 16-OCTADECENAL | | | | | 4 | 136 | 0.38 | 0.82 | | | | |
| HC | SVOC | (TIC) 17-NORKAUR-15-ENE, 13-METHYL-, (8.BETA., | | | | | 1 | 136 | 2.2 | 2.2 | | | | |
| HC | SVOC | (TIC) 17-OCTADECENAL | 1 | 300 | 1 | 1 | | | | | | | | |
| HC | SVOC | (TIC) 17-PENTATRIACONTENE | 4 | 300 | 0.28 | 3.7 | 5 | 136 | 2.3 | 5.1 | | | | |
| HC | SVOC | (TIC) 17-PENTATRICONTENE | 1 | 300 | 1.5 | 1.5 | | | | | | | | |
| HC | SVOC | (TIC) 18-NORABIETANE | 2 | 300 | 0.66 | 2.3 | | | | | | | | |
| HC | SVOC | (TIC) 1-DOCOSANOL | | | | | 2 | 136 | 1.5 | 12 | | | | |
| HC | SVOC | (TIC) 1-DOCOSENE | 20 | 300 | 0.089 | 4.8 | 21 | 136 | 0.9 | 11 | | | | |
| HC | SVOC | (TIC) 1-DODECANOL | | | | | 1 | 136 | 0.49 | 0.49 | | | | |
| HC | SVOC | (TIC) 1-DODECANOL, 3,7,11-TRIMETHYL- | | | | | 1 | 136 | 0.81 | 0.81 | | | | |
| HC | SVOC | (TIC) 1-DODECENE | | | | | 1 | 136 | 0.29 | 0.29 | | | | |
| HC | SVOC | (TIC) 1-DOTRIACONTANOL | | | | | 2 | 136 | 0.49 | 2.7 | | | | |
| HC | SVOC | (TIC) 1-EICOSANOL | 4 | 300 | 0.36 | 3.7 | 5 | 136 | 0.34 | 1.7 | | | | |
| HC | SVOC | (TIC) 1-EICOSENE | 1 | 300 | 0.94 | 0.94 | | | | | | | | |
| HC | SVOC | (TIC) 1-EICOSYNE | | | | | 1 | 136 | 0.94 | 0.94 | | | | |
| HC | SVOC | (TIC) 1H-CYCLOPENTA[1,3]CYCLOPROPA[1,2]BENZENE | 1 | 300 | 0.82 | 0.82 | | | | | | | | |
| HC | SVOC | (TIC) 1H-CYCLOPROP[E]AZULENE, 1A,2,3,4,4A,5,6, | | | | | 1 | 136 | 3.1 | 3.1 | | | | |
| HC | SVOC | (TIC) 1H-CYCLOPROP[E]AZULENE, 1A,2,3,5,6,7,7A, | | | | | 2 | 136 | 0.55 | 4.9 | | | | |
| HC | SVOC | (TIC) 1-HEPTADECENE | 1 | 300 | 1.1 | 1.1 | 1 | 136 | 5.3 | 5.3 | | | | |
| HC | SVOC | (TIC) 1-HEXACOSANAL | | | | | 4 | 136 | 0.41 | 2.6 | | | | |
| HC | SVOC | (TIC) 1-HEXACOSENE | 1 | 300 | 0.57 | 0.57 | | | | | | | | |
| HC | SVOC | (TIC) 1-HEXADECANOL | 2 | 300 | 0.4 | 1.4 | 1 | 136 | 3.7 | 3.7 | | | | |
| HC | SVOC | (TIC) 1H-INDENE, 2-PHENYL- | | | | | 1 | 136 | 0.46 | 0.46 | | | | |
| HC | SVOC | (TIC) 1H-INDENE, OCTAHYDRO-2,3A,4-TRIMETHYL-2- | | | | | 1 | 136 | 1.9 | 1.9 | | | | |
| HC | SVOC | (TIC) 1-METHYL-4-(1-METHYLETHYL)-CYCLOHEXANE | | | | | 1 | 136 | 0.9 | 0.9 | | | | |
| HC | SVOC | (TIC) 1-METHYLPHENANTHRENE | 1 | 300 | 0.31 | 0.31 | | | | | | | | |
| HC | SVOC | (TIC) 1-NAPHTHALENEPROPANOL, .A | | | | | 1 | 136 | 7.5 | 7.5 | | | | |
| HC | SVOC | (TIC) 1-NAPHTHALENEPROPANOL, .ALPHA.-ETHENYLDE | | | | | 1 | 136 | 9.4 | 9.4 | | | | |
| HC | SVOC | (TIC) 1-NONADECANOL | | | | | 2 | 136 | 4.8 | 4.8 | | | | |
| HC | SVOC | (TIC) 1-NONADECENE | 5 | 300 | 0.26 | 3.8 | | | | | | | | |
| HC | SVOC | (TIC) 1-OCTADECANOL | | | | | 1 | 136 | 0.2 | 0.2 | | | | |
| HC | SVOC | (TIC) 1-OCTADECENE | 1 | 300 | 0.96 | 0.96 | 15 | 136 | 0.52 | 9.3 | | | | |
| HC | SVOC | (TIC) 1-PENTADECANOL | | | | | 2 | 136 | 2.2 | 3.2 | | | | |
| HC | SVOC | (TIC) 1-PENTADECENE | | | | | 2 | 136 | 0.7 | 1.4 | | | | |
| HC | SVOC | (TIC) 1-PHENANTHRENECARBOXYLIC ACID, 1,2,3,4,4 | | | | | 1 | 136 | 0.61 | 0.61 | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| HC | SVOC | (TIC) 1-PROPENE,3,3,3-TRICHLORO- | | | | | | | | | 1 | 2 | 0.0025 | 0.0025 |
| HC | SVOC | (TIC) 1R-.ALPHA.-PINENE | 4 | 300 | 0.16 | 3.1 | | | | | | | | |
| HC | SVOC | (TIC) 1R-ALPHA-PINENE | 2 | 300 | 0.39 | 1.6 | | | | | | | | |
| HC | SVOC | (TIC) 1-TETRADECANOL | | | | | 2 | 136 | 0.16 | 0.61 | | | | |
| HC | SVOC | (TIC) 1-TRICOSENE | 1 | 300 | 0.31 | 0.31 | | | | | | | | |
| HC | SVOC | (TIC) 2(1H)-NAPHTHALENONE, OCTAHYDRO-4A-METHYL | | | | | 1 | 136 | 0.3 | 0.3 | | | | |
| HC | SVOC | (TIC) 2(1H)-PHENANTHRENONE, 3,4,4A,4B,5,6,7,8, | | | | | 1 | 136 | 7 | 7 | | | | |
| HC | SVOC | (TIC) 2(3H)-BENZOTHIAZOLONE | | | | | 1 | 136 | 0.3 | 0.3 | | | | |
| HC | SVOC | (TIC) 2,4,6-TRIBROMOPHENOL (SUR) | | | | | 1 | 136 | 2.1 | 2.1 | | | | |
| HC | SVOC | (TIC) 2,6,10,14,18-PENTAMETHYL-2,6,10,14,18-EI | 1 | 300 | 0.11 | 0.11 | | | | | | | | |
| HC | SVOC | (TIC) 2-.BETA.-PINENE | 4 | 300 | 0.15 | 9 | | | | | | | | |
| HC | SVOC | (TIC) 22,23-DIHYDRO-STIGMASTEROL | 3 | 300 | 0.17 | 6.7 | | | | | | | | |
| HC | SVOC | (TIC) 26-NOR-5-CHOLESTEN-3.BETA.25-ONE | | | | | 2 | 136 | 0.98 | 4.4 | | | | |
| HC | SVOC | (TIC) 26-NOR-5-CHOLESTEN-3.BETA.-O | 2 | 300 | 0.42 | 0.79 | | | | | | | | |
| HC | SVOC | (TIC) 26-NOR-5-CHOLESTEN-3.BETA.-OL-25-ONE | 1 | 300 | 0.15 | 0.15 | | | | | | | | |
| HC | SVOC | (TIC) 28-NOR-17.ALPHA.(H)-HOPANE | 1 | 300 | 0.43 | 0.43 | 5 | 136 | 0.24 | 0.98 | | | | |
| HC | SVOC | (TIC) 28-NOR-17.BETA.(H)-HOPANE | | | | | 3 | 136 | 0.39 | 0.59 | | | | |
| HC | SVOC | (TIC) 2-FLUOROPHENOL (SUR) | | | | | 1 | 136 | 1.9 | 1.9 | | | | |
| HC | SVOC | (TIC) 2H,8H-BENZO[1,2-B,3,4-B] | | | | | 1 | 136 | 0.45 | 0.45 | | | | |
| HC | SVOC | (TIC) 2-HEPTACOSANONE | 1 | 300 | 0.63 | 0.63 | 6 | 136 | 1.1 | 1.8 | | | | |
| HC | SVOC | (TIC) 2-HEPTADECANONE | | | | | 1 | 136 | 1.7 | 1.7 | | | | |
| HC | SVOC | (TIC) 2-NAPHTHALENAMINE | 1 | 300 | 0.51 | 0.51 | | | | | | | | |
| HC | SVOC | (TIC) 2-NONACOSANONE | | | | | 7 | 136 | 0.58 | 1.5 | | | | |
| HC | SVOC | (TIC) 2-NONADECANONE | | | | | 3 | 136 | 1.6 | 2.5 | | | | |
| HC | SVOC | (TIC) 2-NONYLPHENOL | | | | | 1 | 136 | 6 | 6 | | | | |
| HC | SVOC | (TIC) 2-OXO-3-PHENYL-6-(4-TOLYL)-1,2,3,4-TETRA | | | | | 1 | 136 | 1.1 | 1.1 | | | | |
| HC | SVOC | (TIC) 2-PENTACOSANONE | 4 | 300 | 0.25 | 1.3 | 9 | 136 | 0.5 | 2.7 | | | | |
| HC | SVOC | (TIC) 2-PENTADECANONE, 6,10,14-TRIMETHYL- | | | | | 2 | 136 | 0.39 | 0.68 | | | | |
| HC | SVOC | (TIC) 2-PENTANONE, 4-HYDROXY-4- | | | | | 4 | 136 | 110 | 210 | | | | |
| HC | SVOC | (TIC) 2-PENTANONE, 4-HYDROXY-4-METHYL- | | | | | 131 | 136 | 9.5 | 530 | | | | |
| HC | SVOC | (TIC) 2-PENTCOSANONE | 1 | 300 | 1.9 | 1.9 | | | | | | | | |
| HC | SVOC | (TIC) 2-PHENANTHRENECARBOXALDEHYDE, 1,2,3,4,4A | | | | | 1 | 136 | 0.21 | 0.21 | | | | |
| HC | SVOC | (TIC) 2-PHENANTHRENOL, 4B,5,6,7,8,8A,9,10-OCTA | | | | | 1 | 136 | 0.38 | 0.38 | | | | |
| HC | SVOC | (TIC) 2-PHENYLNAPHTHALENE | | | | | 6 | 136 | 0.39 | 1.1 | | | | |
| HC | SVOC | (TIC) 2-PROPANOL, 1-(HEXADECYLOXY)- | | | | | 1 | 136 | 1.2 | 1.2 | | | | |
| HC | SVOC | (TIC) 2-PROPEN-1-ONE, 1-(2-HYDROXYPHENYL)-3-(4 | | | | | 1 | 136 | 1.3 | 1.3 | | | | |
| HC | SVOC | (TIC) 2-PROPENOIC ACID, 3-PHENYL-, (E)- | | | | | 1 | 136 | 0.55 | 0.55 | | | | |
| HC | SVOC | (TIC) 3,4-DIHYDROCYCLOPENTA(CD)PYRENE (ACEPYRE | | | | | 3 | 136 | 0.33 | 2.3 | | | | |
| HC | SVOC | (TIC) 3,4-OCTADIENE, 7-METHYL- | | | | | 1 | 136 | 0.84 | 0.84 | | | | |
| HC | SVOC | (TIC) 3,5-DICHLOROPHENYL ISOCYANATE | | | | | 1 | 136 | 0.59 | 0.59 | | | | |
| HC | SVOC | (TIC) 3.ALPHA.,5-CYCLO-5.ALPHA.-CHOLESTAN-2-ON | | | | | 1 | 136 | 12 | 12 | | | | |
| HC | SVOC | (TIC) 3-CARENE | 6 | 300 | 0.24 | 5.6 | | | | | | | | |
| HC | SVOC | (TIC) 3-EICOSENE | 1 | 300 | 0.74 | 0.74 | | | | | | | | |
| HC | SVOC | (TIC) 3-EICOSENE, (E)- | | | | | 3 | 136 | 1.1 | 1.6 | | | | |
| HC | SVOC | (TIC) 3-FLUORANTHENAMINE | | | | | 1 | 136 | 1.1 | 1.1 | | | | |
| HC | SVOC | (TIC) 3H-1,2-DITHIOL-3-ONE, 5-METHYL- | | | | | 1 | 136 | 2.1 | 2.1 | | | | |
| HC | SVOC | (TIC) 3H-3A,7-METHANOAZULENE, 2,4,5,6,7,8-HEXA | | | | | 1 | 136 | 1 | 1 | | | | |
| HC | SVOC | (TIC) 3-METHYL-4-HYDROXYOCTANOIC ACID, .GAMMA. | | | | | 1 | 136 | 1.9 | 1.9 | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| HC | SVOC | (TIC) 4,4,8-TRIMETHYLTRICYCLO[6.3.1.0(1,5) ]DO | 1 | 300 | 0.63 | 0.63 | | | | | | | | |
| HC | SVOC | (TIC) 4H-CYCLOPENTA[DEF]PHENANTHRENE | | | | | 14 | 136 | 0.13 | 1.9 | | | | |
| HC | SVOC | (TIC) 4-METHYLBENZENESULFONAMIDE | 1 | 300 | 0.47 | 0.47 | | | | | | | | |
| HC | SVOC | (TIC) 4-NITRO-4-AMINODIPHENYLSULPHONE | | | | | 1 | 136 | 0.81 | 0.81 | | | | |
| HC | SVOC | (TIC) 5(1H)-AZULENONE, 2,4,6,7,8,8A-HEXAHYDRO- | | | | | 1 | 136 | 1.9 | 1.9 | | | | |
| HC | SVOC | (TIC) 5,12-NAPHTHACENEDIONE | | | | | 1 | 136 | 0.83 | 0.83 | | | | |
| HC | SVOC | (TIC) 5-EICOSENE, (E)- | | | | | 2 | 136 | 1.4 | 3.5 | | | | |
| HC | SVOC | (TIC) 5-EICOSENE,(E)- | 1 | 300 | 0.94 | 0.94 | | | | | | | | |
| HC | SVOC | (TIC) 5-OCTADECENE, (E)- | | | | | 1 | 136 | 2.3 | 2.3 | | | | |
| HC | SVOC | (TIC) 7H-BENZ[DE]ANTHRACEN-7-ONE | | | | | 3 | 136 | 0.28 | 1.1 | | | | |
| HC | SVOC | (TIC) 7-HEXADECYNE | | | | | 1 | 136 | 0.78 | 0.78 | | | | |
| HC | SVOC | (TIC) 7-HEXYLTRIDECAN-1-OL | 1 | 300 | 1.6 | 1.6 | | | | | | | | |
| HC | SVOC | (TIC) 7-HYDROXY-6-METHOXY-2H-1-BENZOPYRAN-2-ON | | | | | 1 | 136 | 1.7 | 1.7 | | | | |
| HC | SVOC | (TIC) 8-HEXADECYNE | 1 | 300 | 1 | 1 | | | | | | | | |
| HC | SVOC | (TIC) 9,10,ANTHRACENEDIONE | 4 | 300 | 0.45 | 0.76 | | | | | | | | |
| HC | SVOC | (TIC) 9,10-ANTHRACENEDIONE | 32 | 300 | 0.14 | 4.6 | 13 | 136 | 0.14 | 0.74 | | | | |
| HC | SVOC | (TIC) 9,10-ANTHRACENEDIONE/UNKNOWN | 1 | 300 | 2.6 | 2.6 | | | | | | | | |
| HC | SVOC | (TIC) 9,10-DIMETHYLANTHRACENE | 1 | 300 | 0.38 | 0.38 | 1 | 136 | 0.43 | 0.43 | | | | |
| HC | SVOC | (TIC) 9,12-OCTADECADIENOICACID(Z,Z)- | 6 | 300 | 0.16 | 0.69 | | | | | | | | |
| HC | SVOC | (TIC) 9-EICOSENE, (E)- | | | | | 1 | 136 | 0.4 | 0.4 | | | | |
| HC | SVOC | (TIC) 9H-CARBAZOLE | 2 | 300 | 0.55 | 1.5 | | | | | | | | |
| HC | SVOC | (TIC) 9-HEXACOSENE | | | | | 1 | 136 | 0.64 | 0.64 | | | | |
| HC | SVOC | (TIC) 9-HEXADECENOIC ACID | | | | | 11 | 136 | 0.42 | 4.8 | | | | |
| HC | SVOC | (TIC) 9H-FLUORENE, 4-METHYL- | | | | | 1 | 136 | 0.61 | 0.61 | | | | |
| HC | SVOC | (TIC) 9H-XANTHEN-9-ONE, 2-HYDROXY- | | | | | 1 | 136 | 3.8 | 3.8 | | | | |
| HC | SVOC | (TIC) 9-OCTADECENAMIDE,(Z)- | 1 | 300 | 0.16 | 0.16 | | | | | | | | |
| HC | SVOC | (TIC) ACETAMIDE | | | | | 1 | 136 | 0.35 | 0.35 | | | | |
| HC | SVOC | (TIC) ACETICACID,OCTADECYLESTER | 1 | 300 | 1.1 | 1.1 | | | | | | | | |
| HC | SVOC | (TIC) ACETOPHENONE | 2 | 300 | 0.1 | 0.38 | 1 | 136 | 0.26 | 0.26 | | | | |
| HC | SVOC | (TIC) ADAMANTANE, 1,3-DIMETHYL- | | | | | 1 | 136 | 0.11 | 0.11 | | | | |
| HC | SVOC | (TIC) ALPHA.-MUUROLENE | 1 | 300 | 0.51 | 0.51 | | | | | | | | |
| HC | SVOC | (TIC) ALPHA.-MUUROLENE-(-) | 2 | 300 | 0.48 | 0.92 | | | | | | | | |
| HC | SVOC | (TIC) ALPHA.-PINENE,(-)- | 3 | 300 | 0.38 | 3.6 | | | | | | | | |
| HC | SVOC | (TIC) ALPHA-AMYRIN | 1 | 300 | 2.4 | 2.4 | | | | | | | | |
| HC | SVOC | (TIC) ALPHA-PINENE | 1 | 300 | 0.49 | 0.49 | | | | | | | | |
| HC | SVOC | (TIC) ANDROSTAN-17-ONE, 3,11-DIHYDROXY-, (3.AL | | | | | 2 | 136 | 2.6 | 3 | | | | |
| HC | SVOC | (TIC) ANDROSTAN-4-ONE, (5.BETA.)- | | | | | 2 | 136 | 0.41 | 1.1 | | | | |
| HC | SVOC | (TIC) A-NEOGAMMACER-22(29)-EN-3-OL, (3.BETA., | | | | | 1 | 136 | 1.6 | 1.6 | | | | |
| HC | SVOC | (TIC) ANTHRACENE, 1-METHYL- | | | | | 2 | 136 | 0.1 | 0.59 | | | | |
| HC | SVOC | (TIC) ANTHRACENE, 2-ETHYL- | | | | | 1 | 136 | 0.35 | 0.35 | | | | |
| HC | SVOC | (TIC) ANTHRACENE, 2-METHYL- | | | | | 8 | 136 | 0.15 | 1.1 | | | | |
| HC | SVOC | (TIC) ANTHRACENE, 9-DODECYLTETRADECAHYDRO- | | | | | 1 | 136 | 1.2 | 1.2 | | | | |
| HC | SVOC | (TIC) ANTHRACENE, 9-METHYL- | | | | | 3 | 136 | 0.52 | 1.2 | | | | |
| HC | SVOC | (TIC) AZETIDINE, 1-NITROSO- | | | | | 1 | 136 | 1.8 | 1.8 | | | | |
| HC | SVOC | (TIC) BENZ(A)ANTHRACENE-7,12-DIONE | | | | | 1 | 136 | 1.3 | 1.3 | | | | |
| HC | SVOC | (TIC) BENZ[A]ACRIDINE, 10-METHYL- | | | | | 1 | 136 | 0.47 | 0.47 | | | | |
| HC | SVOC | (TIC) BENZ[A]ANTHRACENE, 11-METHYL- | | | | | 1 | 136 | 1.3 | 1.3 | | | | |
| HC | SVOC | (TIC) BENZ[A]ANTHRACENE, 12-METHYL- | | | | | 1 | 136 | 0.98 | 0.98 | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| HC | SVOC | (TIC) BENZ[A]ANTHRACENE, 1-METHYL- | | | | | 1 | 136 | 0.22 | 0.22 | | | | |
| HC | SVOC | (TIC) BENZ[A]ANTHRACENE, 8-METHYL- | | | | | 2 | 136 | 0.095 | 1.1 | | | | |
| HC | SVOC | (TIC) BENZ[J]ACEANTHRYLENE, 3-METHYL- | | | | | 2 | 136 | 0.33 | 1 | | | | |
| HC | SVOC | (TIC) BENZALDEHYDE | 2 | 300 | 0.42 | 3.3 | | | | | | | | |
| HC | SVOC | (TIC) BENZALDEHYDE, 3,5-DICHLORO-2-HYDROXY- | | | | | 1 | 136 | 1 | 1 | | | | |
| HC | SVOC | (TIC) BENZALDEHYDE,4-HYDROXY- | 1 | 300 | 0.48 | 0.48 | | | | | | | | |
| HC | SVOC | (TIC) BENZENE, (1-BUTYLHEPTYL)- | | | | | 4 | 136 | 0.63 | 5.3 | | | | |
| HC | SVOC | (TIC) BENZENE, (1-BUTYLNONYL)- | | | | | 1 | 136 | 0.88 | 0.88 | | | | |
| HC | SVOC | (TIC) BENZENE, (1-ETHYLDECYL)- | | | | | 1 | 136 | 3.6 | 3.6 | | | | |
| HC | SVOC | (TIC) BENZENE, (1-ETHYLNONYL)- | | | | | 1 | 136 | 1.6 | 1.6 | | | | |
| HC | SVOC | (TIC) BENZENE, (1-HEXYLHEPTYL)- | | | | | 4 | 136 | 0.61 | 3.1 | | | | |
| HC | SVOC | (TIC) BENZENE, (1-METHYL-1-PROPENYL)-, (Z)- | | | | | 1 | 136 | 1.4 | 1.4 | | | | |
| HC | SVOC | (TIC) BENZENE, (1-PENTYLHEPTYL)- | | | | | 1 | 136 | 8 | 8 | | | | |
| HC | SVOC | (TIC) BENZENE, (1-PENTYLOCTYL)- | | | | | 1 | 136 | 4.3 | 4.3 | | | | |
| HC | SVOC | (TIC) BENZENE, (1-PROPYLHEPTYL)- | | | | | 1 | 136 | 1.6 | 1.6 | | | | |
| HC | SVOC | (TIC) BENZENE, (1-PROPYLOCTYL)- | | | | | 3 | 136 | 0.49 | 6.2 | | | | |
| HC | SVOC | (TIC) BENZENE, 1,2,3-TRIMETHYL- | | | | | 2 | 136 | 0.73 | 6.1 | | | | |
| HC | SVOC | (TIC) BENZENE, 1,2,4,5-TETRAMETHYL- | | | | | 1 | 136 | 0.6 | 0.6 | | | | |
| HC | SVOC | (TIC) BENZENE, 1,2-DICHLORO-4-ISOCYANATO- | | | | | 5 | 136 | 0.17 | 0.71 | | | | |
| HC | SVOC | (TIC) BENZENE, 1,4-DICHLORO-2-ISOCYANATO- | | | | | 1 | 136 | 0.88 | 0.88 | | | | |
| HC | SVOC | (TIC) BENZENE, 1,4-DIETHYL-2-METHYL- | | | | | 1 | 136 | 0.45 | 0.45 | | | | |
| HC | SVOC | (TIC) BENZENE, 1-CHLORO-2-ISOCYANATO- | | | | | 3 | 136 | 0.38 | 2.5 | | | | |
| HC | SVOC | (TIC) BENZENE, 1-ETHYL-2,3-DIMETHYL- | | | | | 2 | 136 | 0.61 | 3.3 | | | | |
| HC | SVOC | (TIC) BENZENE, 1-ETHYL-2,4-DIMETHYL- | | | | | 1 | 136 | 1.4 | 1.4 | | | | |
| HC | SVOC | (TIC) BENZENE, 1-METHYL-2-(1-METHYLETHYL)- | | | | | 2 | 136 | 1.8 | 7.8 | | | | |
| HC | SVOC | (TIC) BENZENE, 1-METHYL-3-PROPYL- | | | | | 2 | 136 | 1.7 | 10 | | | | |
| HC | SVOC | (TIC) BENZENE, 2,4-DIETHYL-1-METHYL- | | | | | 1 | 136 | 0.44 | 0.44 | | | | |
| HC | SVOC | (TIC) BENZENE, 4-ETHYL-1,2-DIMETHYL- | | | | | 2 | 136 | 0.89 | 7.9 | | | | |
| HC | SVOC | (TIC) BENZENE, CHLOROISOCYANATO- | | | | | 3 | 136 | 0.57 | 0.63 | | | | |
| HC | SVOC | (TIC) BENZENE, ISOCYANATO- | | | | | 1 | 136 | 0.81 | 0.81 | | | | |
| HC | SVOC | (TIC) BENZENE,1,2-(METHYLENEDIOXY)-4-PROPENYL | 2 | 300 | 0.72 | 0.74 | | | | | | | | |
| HC | SVOC | (TIC) BENZENEACETIC ACID | 5 | 300 | 0.12 | 1.7 | 1 | 136 | 0.24 | 0.24 | | | | |
| HC | SVOC | (TIC) BENZENEACETICACID | 27 | 300 | 0.1 | 3.4 | | | | | | | | |
| HC | SVOC | (TIC) BENZO(A)ACRIDINE | | | | | 1 | 136 | 6.9 | 6.9 | | | | |
| HC | SVOC | (TIC) BENZO(B)NAPHTHOFURANISOMER | 8 | 300 | 0.15 | 2.3 | 1 | 136 | 0.22 | 0.22 | | | | |
| HC | SVOC | (TIC) BENZO(B)NAPHTHOFURANISOMER/UNKNOWN | 1 | 300 | 2.7 | 2.7 | | | | | | | | |
| HC | SVOC | (TIC) BENZO(B)NAPHTHOTHIOPHENEISOMER | 10 | 300 | 0.15 | 5.1 | 1 | 136 | 0.16 | 0.16 | | | | |
| HC | SVOC | (TIC) BENZO(C)CARBAZOLE | | | | | 1 | 136 | 0.25 | 0.25 | | | | |
| HC | SVOC | (TIC) BENZO(K)FLUORANTHENE | | | | | 1 | 136 | 2 | 2 | | | | |
| HC | SVOC | (TIC) BENZO[B]NAPHTHO[1,2-D]THIOPHENE | | | | | 1 | 136 | 1.2 | 1.2 | | | | |
| HC | SVOC | (TIC) BENZO[B]NAPHTHO[2,1-D]THIOPHENE | | | | | 6 | 136 | 0.24 | 7.1 | | | | |
| HC | SVOC | (TIC) BENZO[B]NAPHTHO[2,3-D]FURAN | | | | | 3 | 136 | 0.15 | 0.62 | | | | |
| HC | SVOC | (TIC) BENZO[B]TRIPHENYLENE | 1 | 300 | 0.61 | 0.61 | | | | | | | | |
| HC | SVOC | (TIC) BENZO[C]PHENANTHRENE | | | | | 3 | 136 | 0.83 | 2.3 | | | | |
| HC | SVOC | (TIC) BENZO[C]PHENANTHRENE, 6-METHYL- | | | | | 1 | 136 | 0.28 | 0.28 | | | | |
| HC | SVOC | (TIC) BENZO[E]PYRENE | | | | | 29 | 136 | 0.14 | 3.9 | | | | |
| HC | SVOC | (TIC) BENZO[J]FLUORANTHENE | | | | | 1 | 136 | 1 | 1 | | | | |
| HC | SVOC | (TIC) BENZO[K]FLUORANTHENE | | | | | 1 | 136 | 1.5 | 1.5 | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| HC | SVOC | (TIC) BENZOCARBAZOLEISOMER | 2 | 300 | 0.15 | 6.8 | | | | | | | | |
| HC | SVOC | (TIC) BENZOIC ACID | 19 | 300 | 0.097 | 13 | 1 | 136 | 0.35 | 0.35 | | | | |
| HC | SVOC | (TIC) BENZOICACID,2,5-DIHYDROXY-,METHYLEST | 1 | 300 | 0.12 | 0.12 | | | | | | | | |
| HC | SVOC | (TIC) BENZOICACID,4-HYDROXY- | 1 | 300 | 1.3 | 1.3 | | | | | | | | |
| HC | SVOC | (TIC) BENZYLBUTYLPHTHALATE | 1 | 300 | 0.089 | 0.089 | | | | | | | | |
| HC | SVOC | (TIC) BETA.-SELINENE | 1 | 300 | 2.8 | 2.8 | | | | | | | | |
| HC | SVOC | (TIC) BETA-SITOSTEROL | 25 | 300 | 0.34 | 1.9 | | | | | | | | |
| HC | SVOC | (TIC) BICYCLO[2.2.1]HEPTAN-2-ONE, 1,7,7-TRIMET | 1 | 300 | 0.28 | 0.28 | | | | | | | | |
| HC | SVOC | (TIC) BICYCLO[2.2.1]HEPTAN-2-ONE,1,7,7-TRIMET | 1 | 300 | 0.19 | 0.19 | | | | | | | | |
| HC | SVOC | (TIC) BICYCLO[2.2.1]HEPTANE,2,2-DIMETHYL-3-ME | 1 | 300 | 0.6 | 0.6 | | | | | | | | |
| HC | SVOC | (TIC) BICYCLO[2.2.1]HEPTANE,7,7-DIMETHYL-2-ME | 1 | 300 | 0.14 | 0.14 | | | | | | | | |
| HC | SVOC | (TIC) BICYCLO[3.1.1]HEPT-2-ENE, 3,6,6-TRIMETHY | | | | | 1 | 136 | 0.76 | 0.76 | | | | |
| HC | SVOC | (TIC) BICYCLO[3.1.1]HEPT-2-ENE,3,6,6-TRIMETHY | 1 | 300 | 1.8 | 1.8 | | | | | | | | |
| HC | SVOC | (TIC) BICYCLO[3.1.1]HEPTANE,6,6-DIMETHYL-2-ME | 2 | 300 | 0.48 | 0.98 | | | | | | | | |
| HC | SVOC | (TIC) BICYCLO[3-1-1]HEPT-2-ENE, 3,6,6-TRIMETHY | | | | | 1 | 136 | 0.57 | 0.57 | | | | |
| HC | SVOC | (TIC) BICYCLO[7.2.0]UNDE-4-ENE | 1 | 300 | 0.61 | 0.61 | | | | | | | | |
| HC | SVOC | (TIC) BICYCLO[7.2.0]UNDEC-4-ENE,4,11,11-TRIME | 1 | 300 | 0.45 | 0.45 | | | | | | | | |
| HC | SVOC | (TIC) BIS(2-ETHYLHEXYL) PHTHALATE | | | | | 6 | 136 | 0.15 | 14 | | | | |
| HC | SVOC | (TIC) BUTANOIC ACID, 2-METHYL- | | | | | 1 | 136 | 0.58 | 0.58 | | | | |
| HC | SVOC | (TIC) BUTYL ESTER HEXADECANOIC ACI | 1 | 300 | 3.1 | 3.1 | | | | | | | | |
| HC | SVOC | (TIC) BUTYL ESTER OCTADECANOIC ACI | 11 | 300 | 0.1 | 4.9 | | | | | | | | |
| HC | SVOC | (TIC) C(14A)-HOMO-27-NOR-14.BETA.-GAMMACERAN-3 | | | | | 1 | 136 | 2.9 | 2.9 | | | | |
| HC | SVOC | (TIC) C10H22ALKANE | 1 | 300 | 0.78 | 0.78 | | | | | | | | |
| HC | SVOC | (TIC) C15H10/C15H12PAHS | 5 | 300 | 0.11 | 4.8 | | | | | | | | |
| HC | SVOC | (TIC) C15H10PAH | 21 | 300 | 0.28 | 10 | 1 | 136 | 0.33 | 0.33 | | | | |
| HC | SVOC | (TIC) C15H12PAH | 16 | 300 | 0.21 | 5.2 | 1 | 136 | 0.17 | 0.17 | | | | |
| HC | SVOC | (TIC) C15H12PAH/UNKNOWN | 1 | 300 | 0.37 | 0.37 | | | | | | | | |
| HC | SVOC | (TIC) C16H12PAH | 1 | 300 | 0.8 | 0.8 | | | | | | | | |
| HC | SVOC | (TIC) C16H14PAH | 3 | 300 | 0.26 | 8.3 | 1 | 136 | 0.1 | 0.1 | | | | |
| HC | SVOC | (TIC) C16H14PAH/UNKNOWN | 1 | 300 | 0.76 | 0.76 | | | | | | | | |
| HC | SVOC | (TIC) C17H10OKETONE | 9 | 300 | 0.19 | 2.4 | | | | | | | | |
| HC | SVOC | (TIC) C17H10OKETONE/UNKNOWN | 2 | 300 | 0.19 | 1.7 | | | | | | | | |
| HC | SVOC | (TIC) C17H10PAH/UNKNOWN | 1 | 300 | 2.3 | 2.3 | | | | | | | | |
| HC | SVOC | (TIC) C17H12PAH | 29 | 300 | 0.18 | 8.5 | 1 | 136 | 0.3 | 0.3 | | | | |
| HC | SVOC | (TIC) C17H12PAH/UNKNOWN | 2 | 300 | 0.29 | 1.9 | 1 | 136 | 0.13 | 0.13 | | | | |
| HC | SVOC | (TIC) C18H10/C18H12PAHS | 1 | 300 | 0.16 | 0.16 | | | | | | | | |
| HC | SVOC | (TIC) C18H10PAH | 6 | 300 | 0.17 | 5.4 | | | | | | | | |
| HC | SVOC | (TIC) C18H12PAH | 2 | 300 | 0.14 | 7.6 | | | | | | | | |
| HC | SVOC | (TIC) C18H12PAH/UNKNOWN | 1 | 300 | 1.8 | 1.8 | 1 | 136 | 0.13 | 0.13 | | | | |
| HC | SVOC | (TIC) C19H14PAH | 10 | 300 | 0.2 | 5.5 | 1 | 136 | 0.096 | 0.096 | | | | |
| HC | SVOC | (TIC) C20H12PAH | 34 | 300 | 0.1 | 21 | 1 | 136 | 0.75 | 0.75 | | | | |
| HC | SVOC | (TIC) C20H12PAH/UNKNOWN | 3 | 300 | 0.2 | 1.4 | | | | | | | | |
| HC | SVOC | (TIC) C20H42ALKANE | 2 | 300 | 0.37 | 1.3 | | | | | | | | |
| HC | SVOC | (TIC) CAMPESTEROL | 9 | 300 | 0.22 | 2.3 | 2 | 136 | 2.5 | 3.9 | | | | |
| HC | SVOC | (TIC) CAMPHENE | 1 | 300 | 0.42 | 0.42 | | | | | | | | |
| HC | SVOC | (TIC) CAMPHOR | 7 | 300 | 0.18 | 11 | | | | | | | | |
| HC | SVOC | (TIC) CARYOPHYLLENE | 4 | 300 | 0.21 | 1.9 | 2 | 136 | 0.3 | 1.1 | | | | |
| HC | SVOC | (TIC) CARYPHYLLENE | 1 | 300 | 0.6 | 0.6 | | | | | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| HC | SVOC | (TIC) CEDROL | 1 | 300 | 0.87 | 0.87 | | | | | | | | |
| HC | SVOC | (TIC) CHLOROANILINE ISOMER | 1 | 300 | 3.3 | 3.3 | | | | | | | | |
| HC | SVOC | (TIC) CHOLEST-4-EN-3-ONE | 1 | 300 | 3.9 | 3.9 | 1 | 136 | 13 | 13 | | | | |
| HC | SVOC | (TIC) CHOLEST-5-EN-3-ONE | | | | | 3 | 136 | 3.2 | 20 | | | | |
| HC | SVOC | (TIC) CHOLEST-5-EN-3-ONE, 4,4-DIMETHYL- | | | | | 1 | 136 | 8 | 8 | | | | |
| HC | SVOC | (TIC) CHOLESTA-3,5-DIENE | | | | | 1 | 136 | 6.2 | 6.2 | | | | |
| HC | SVOC | (TIC) CHOLESTAN-3.BETA.-OL | 1 | 300 | 1.9 | 1.9 | | | | | | | | |
| HC | SVOC | (TIC) CHOLESTAN-3-OL | 4 | 300 | 0.55 | 5.1 | | | | | | | | |
| HC | SVOC | (TIC) CHOLESTAN-3-ONE | 1 | 300 | 1.8 | 1.8 | | | | | | | | |
| HC | SVOC | (TIC) CHOLESTANE, 3-ETHOXY-, (3.BETA.,5.ALPHA. | | | | | 3 | 136 | 1.5 | 7.5 | | | | |
| HC | SVOC | (TIC) CHOLESTANE, 4,5-EPOXY-, (4.ALPHA.,5.ALPH | | | | | 2 | 136 | 3.5 | 4.4 | | | | |
| HC | SVOC | (TIC) CHOLESTANOL | 1 | 300 | 26 | 26 | 21 | 136 | 0.52 | 78 | | | | |
| HC | SVOC | (TIC) CHOLESTEROL | 1 | 300 | 0.089 | 0.089 | 26 | 136 | 0.28 | 57 | | | | |
| HC | SVOC | (TIC) CHRYSENE, 4-METHYL- | | | | | 1 | 136 | 0.26 | 0.26 | | | | |
| HC | SVOC | (TIC) CHRYSENE, 5-METHYL- | | | | | 1 | 136 | 1.5 | 1.5 | | | | |
| HC | SVOC | (TIC) CHRYSENE, 6-METHYL- | | | | | 1 | 136 | 0.82 | 0.82 | | | | |
| HC | SVOC | (TIC) CINNAMOYLGLYCINE,METHYLESTER | 1 | 300 | 0.15 | 0.15 | | | | | | | | |
| HC | SVOC | (TIC) CINNAMYL CINNAMATE | | | | | 3 | 136 | 2.9 | 6.7 | | | | |
| HC | SVOC | (TIC) CINNAMYLCINNAMATE | 7 | 300 | 0.29 | 3.9 | | | | | | | | |
| HC | SVOC | (TIC) COPAENE | 2 | 300 | 0.2 | 0.24 | | | | | | | | |
| HC | SVOC | (TIC) COPROSTAN-3-ONE | | | | | 12 | 136 | 0.18 | 5.3 | | | | |
| HC | SVOC | (TIC) CYCLODECANE | 1 | 300 | 0.14 | 0.14 | | | | | | | | |
| HC | SVOC | (TIC) CYCLODODECANE | | | | | 11 | 136 | 0.14 | 1.5 | | | | |
| HC | SVOC | (TIC) CYCLOHEXADECANE | 1 | 300 | 0.14 | 0.14 | | | | | | | | |
| HC | SVOC | (TIC) CYCLOHEXANE,1-METHYL-4-(1-METHYLETHYLID | 1 | 300 | 0.93 | 0.93 | | | | | | | | |
| HC | SVOC | (TIC) CYCLOHEXANECARBOXYLICACID | 1 | 300 | 3 | 3 | | | | | | | | |
| HC | SVOC | (TIC) CYCLOHEXANONE, 2,3-DIMETHYL- | | | | | 1 | 136 | 2.8 | 2.8 | | | | |
| HC | SVOC | (TIC) CYCLOHEXENE, 1-METHYL-4-(5-METHYL-1-METH | | | | | 1 | 136 | 0.27 | 0.27 | | | | |
| HC | SVOC | (TIC) CYCLOOCTACOSANE | 1 | 300 | 0.24 | 0.24 | | | | | | | | |
| HC | SVOC | (TIC) CYCLOPROPANENONANOIC ACID, 2-[(2-BUTYLCY | | | | | 2 | 136 | 0.24 | 0.7 | | | | |
| HC | SVOC | (TIC) CYCLOTETRACOSANE | 16 | 300 | 0.2 | 1.9 | 4 | 136 | 1.2 | 6.8 | | | | |
| HC | SVOC | (TIC) D:A-FRIEDOURSAN-3-ONE | | | | | 2 | 136 | 2.3 | 4 | | | | |
| HC | SVOC | (TIC) D:C-FREIDOOLEAN-8-EN-3-ONE | 1 | 300 | 0.78 | 0.78 | | | | | | | | |
| HC | SVOC | (TIC) D:C-FRIEDOOLEAN-8-EN-3-ON | | | | | 3 | 136 | 2.1 | 3.9 | | | | |
| HC | SVOC | (TIC) D:C-FRIEDOOLEAN-8-EN-3-ONE | 4 | 300 | 0.58 | 10 | 21 | 136 | 0.55 | 78 | | | | |
| HC | SVOC | (TIC) D:C-FRIEDOOLEANAN-3-ONE | | | | | 11 | 136 | 0.84 | 19 | | | | |
| HC | SVOC | (TIC) D-C-FRIEDOOLEAN-8-EN-3-ONE | | | | | 3 | 136 | 3.8 | 6.5 | | | | |
| HC | SVOC | (TIC) DC-FRIEDOOLEAN-8-EN-3-ONE | | | | | 1 | 136 | 9 | 9 | | | | |
| HC | SVOC | (TIC) DDDISOMER | 1 | 300 | 0.47 | 0.47 | | | | | | | | |
| HC | SVOC | (TIC) DDDISOMER/C17H12PAH | 1 | 300 | 0.34 | 0.34 | | | | | | | | |
| HC | SVOC | (TIC) DECAHYDRO-4,4,8,9,10-PENTAMETHYLNAPHTHAL | | | | | 1 | 136 | 0.14 | 0.14 | | | | |
| HC | SVOC | (TIC) DECAHYDRODIMETHYLNAPHTHALENEISOMER | 1 | 300 | 0.16 | 0.16 | | | | | | | | |
| HC | SVOC | (TIC) DECAHYDROMETHYLNAPHTHALENEISOMER | 1 | 300 | 0.37 | 0.37 | | | | | | | | |
| HC | SVOC | (TIC) DELTA.3-CARENE | 2 | 300 | 0.5 | 1.8 | | | | | | | | |
| HC | SVOC | (TIC) DELTA.-CADINENE | 1 | 300 | 0.65 | 0.65 | | | | | | | | |
| HC | SVOC | (TIC) D-FRIEDOOLEAN-14-EN-3-ONE | | | | | 27 | 136 | 0.37 | 31 | | | | |
| HC | SVOC | (TIC) D-FRIEDOOLEAN-14-ENE, 3-METHOXY-, (3.BET | | | | | 2 | 136 | 2.1 | 18 | | | | |
| HC | SVOC | (TIC) D-HOMOANDROSTANE, (5.ALPHA.,13.ALPHA.)- | | | | | 4 | 136 | 0.41 | 6.3 | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| HC | SVOC | (TIC) DIBENZOFURAN | | | | | 3 | 136 | 0.18 | 0.39 | | | | |
| HC | SVOC | (TIC) DIBENZOTHIOPHENE | 1 | 300 | 4.4 | 4.4 | 6 | 136 | 0.13 | 0.51 | | | | |
| HC | SVOC | (TIC) DIBENZOTHIOPHENE, 3-METHYL- | | | | | 3 | 136 | 0.43 | 0.83 | | | | |
| HC | SVOC | (TIC) DICHLOROANILINEISOMER | 1 | 300 | 1.4 | 1.4 | | | | | | | | |
| HC | SVOC | (TIC) DIETHYLTOLUAMIDE | | | | | 1 | 136 | 1.3 | 1.3 | | | | |
| HC | SVOC | (TIC) DIHYDROCHOLESTEROL | | | | | 1 | 136 | 1.1 | 1.1 | | | | |
| HC | SVOC | (TIC) D-LIMONENE | 2 | 300 | 1.2 | 1.3 | | | | | | | | |
| HC | SVOC | (TIC) DL-LIMONENE | 4 | 300 | 0.27 | 3.8 | | | | | | | | |
| HC | SVOC | (TIC) DOCOSANE | | | | | 1 | 136 | 2.7 | 2.7 | | | | |
| HC | SVOC | (TIC) DOCOSANOIC ACID | 11 | 300 | 0.27 | 1.5 | | | | | | | | |
| HC | SVOC | (TIC) DOCOSANOICACID | 1 | 300 | 0.33 | 0.33 | | | | | | | | |
| HC | SVOC | (TIC) DODECANOIC ACID | 1 | 300 | 1 | 1 | | | | | | | | |
| HC | SVOC | (TIC) DODECANOIC ACID, HEXADECYL ESTER | | | | | 1 | 136 | 1.9 | 1.9 | | | | |
| HC | SVOC | (TIC) E-15-HEPTADECENAL | 1 | 300 | 0.088 | 0.088 | | | | | | | | |
| HC | SVOC | (TIC) EICOSANE | 1 | 300 | 0.61 | 0.61 | | | | | | | | |
| HC | SVOC | (TIC) EICOSANOIC ACID | 1 | 300 | 0.43 | 0.43 | | | | | | | | |
| HC | SVOC | (TIC) ELEMENE | 1 | 300 | 0.39 | 0.39 | | | | | | | | |
| HC | SVOC | (TIC) EPICHOLESTANOL | 1 | 300 | 0.61 | 0.61 | 4 | 136 | 0.28 | 6 | | | | |
| HC | SVOC | (TIC) EPICOPROSTANOL | | | | | 2 | 136 | 26 | 85 | | | | |
| HC | SVOC | (TIC) ERGOST-5-EN-3-OL, (3.BETA.)- | | | | | 7 | 136 | 1.4 | 6.3 | | | | |
| HC | SVOC | (TIC) ERGOST-5-EN-3-OL,(3.BETA.)- | 3 | 300 | 0.13 | 0.29 | | | | | | | | |
| HC | SVOC | (TIC) ERGOSTANOL | 2 | 300 | 0.68 | 3.5 | 15 | 136 | 0.85 | 15 | | | | |
| HC | SVOC | (TIC) ERUCYLAMIDE | 4 | 300 | 0.62 | 1.9 | | | | | | | | |
| HC | SVOC | (TIC) ETHANOL, 2-(HEXADECYLOXY)- | | | | | 1 | 136 | 0.96 | 0.96 | | | | |
| HC | SVOC | (TIC) ETHANOL, 2-(TETRADECYLOXY)- | | | | | 1 | 136 | 4.6 | 4.6 | | | | |
| HC | SVOC | (TIC) ETHANONE,1-(2-HYDROXYPHENYL)- | 1 | 300 | 1.1 | 1.1 | | | | | | | | |
| HC | SVOC | (TIC) ETHANONE,1-(4-HYDROXYPHENYL)- | 1 | 300 | 0.7 | 0.7 | | | | | | | | |
| HC | SVOC | (TIC) ETHYLDIMETHYLBENZENEISOMER | 1 | 300 | 0.92 | 0.92 | | | | | | | | |
| HC | SVOC | (TIC) ETHYLTRIMETHYLNAPHTHALENEISOMER | 1 | 300 | 0.33 | 0.33 | | | | | | | | |
| HC | SVOC | (TIC) EUCALYPTOL | 3 | 300 | 0.21 | 1.6 | | | | | | | | |
| HC | SVOC | (TIC) FRIEDELAN-3-ONE | 9 | 300 | 0.3 | 4.8 | | | | | | | | |
| HC | SVOC | (TIC) FRIEDELIN | 4 | 300 | 1 | 8 | | | | | | | | |
| HC | SVOC | (TIC) FRIEDLAN-3-ONE | 1 | 300 | 1 | 1 | | | | | | | | |
| HC | SVOC | (TIC) GAMMA-SITOSTEROL | 13 | 300 | 0.095 | 3.8 | | | | | | | | |
| HC | SVOC | (TIC) GERMACRENE D | 2 | 300 | 0.55 | 1.2 | | | | | | | | |
| HC | SVOC | (TIC) HEPTADECANOIC ACID | | | | | 1 | 136 | 0.71 | 0.71 | | | | |
| HC | SVOC | (TIC) HEPTAFLUOROBUTYRIC ACID,N-OC | 1 | 300 | 0.8 | 0.8 | | | | | | | | |
| HC | SVOC | (TIC) HEXADECANAL | | | | | 6 | 136 | 0.061 | 2.5 | | | | |
| HC | SVOC | (TIC) HEXADECANAMIDE | 1 | 300 | 0.81 | 0.81 | | | | | | | | |
| HC | SVOC | (TIC) HEXADECANE | | | | | 1 | 136 | 0.96 | 0.96 | | | | |
| HC | SVOC | (TIC) HEXADECANOIC ACID | 1 | 300 | 1.9 | 1.9 | 52 | 136 | 0.12 | 18 | | | | |
| HC | SVOC | (TIC) HEXADECANOICACID | 16 | 300 | 0.12 | 9.5 | | | | | | | | |
| HC | SVOC | (TIC) HEXADECANOICACID,BUTYLESTER | 4 | 300 | 0.11 | 0.18 | | | | | | | | |
| HC | SVOC | (TIC) HEXADECENOICACID,Z-11- | 1 | 300 | 0.15 | 0.15 | | | | | | | | |
| HC | SVOC | (TIC) HEXADECYL ESTER BROMOACETIC | 1 | 300 | 0.72 | 0.72 | | | | | | | | |
| HC | SVOC | (TIC) HEXAHYDRODIMETHYLNAPHTHALENEISOMER | 1 | 300 | 0.14 | 0.14 | | | | | | | | |
| HC | SVOC | (TIC) HEXANOICACID | 6 | 300 | 0.11 | 1.3 | | | | | | | | |
| HC | SVOC | (TIC) HOP-22(29)-EN-3.BETA.-OL | 5 | 300 | 0.43 | 20 | 6 | 136 | 0.7 | 5.8 | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| HC | SVOC | (TIC) INDENO(1,2,3-CD)PYRENE | | | | | 1 | 136 | 1.2 | 1.2 | | | | |
| HC | SVOC | (TIC) ISOPIMARADIENE | 1 | 300 | 1.1 | 1.1 | | | | | | | | |
| HC | SVOC | (TIC) JUGLON | 1 | 300 | 0.5 | 0.5 | | | | | | | | |
| HC | SVOC | (TIC) JUNIPENE | 1 | 300 | 1 | 1 | | | | | | | | |
| HC | SVOC | (TIC) L-.BETA.-PINENE | 1 | 300 | 1.2 | 1.2 | | | | | | | | |
| HC | SVOC | (TIC) LONGIFOLENALDEHYDE | | | | | 1 | 136 | 1.1 | 1.1 | | | | |
| HC | SVOC | (TIC) LUP-20(29)-EN-3-ONE | 4 | 300 | 0.14 | 14 | 17 | 136 | 1.3 | 71 | | | | |
| HC | SVOC | (TIC) LUPEOL | 5 | 300 | 0.26 | 7.6 | 32 | 136 | 0.51 | 40 | | | | |
| HC | SVOC | (TIC) METHYL ISOLITHOCHOLATE | 1 | 300 | 5.3 | 5.3 | | | | | | | | |
| HC | SVOC | (TIC) NAPHTHALENE, 1-(PHENYLMETHYL)- | | | | | 1 | 136 | 1.7 | 1.7 | | | | |
| HC | SVOC | (TIC) NAPHTHALENE, 1,2,3,4,4A,5,6,8A-OCTAHYDRO | 3 | 300 | 0.52 | 0.92 | | | | | | | | |
| HC | SVOC | (TIC) NAPHTHALENE, 1,2,3,4-TETRAHYDRO-1,6-DIME | | | | | 3 | 136 | 0.19 | 3.4 | | | | |
| HC | SVOC | (TIC) NAPHTHALENE, 1,2,3,5,6,7,8,8A-OCTAHYDRO- | | | | | 1 | 136 | 2.6 | 2.6 | | | | |
| HC | SVOC | (TIC) NAPHTHALENE, 1,2-DIHYDRO-4-PHENYL- | | | | | 1 | 136 | 0.56 | 0.56 | | | | |
| HC | SVOC | (TIC) NAPHTHALENE, 1,4,6-TRIMETHYL- | | | | | 1 | 136 | 0.18 | 0.18 | | | | |
| HC | SVOC | (TIC) NAPHTHALENE, 1,6-DIMETHYL-4-(1-METHYLETH | 2 | 300 | 0.6 | 0.79 | | | | | | | | |
| HC | SVOC | (TIC) NAPHTHALENE, 1-METHYL- | | | | | 2 | 136 | 0.17 | 0.62 | | | | |
| HC | SVOC | (TIC) NAPHTHALENE, 2,6-DIMETHYL- | | | | | 1 | 136 | 0.46 | 0.46 | | | | |
| HC | SVOC | (TIC) NAPHTHALENE, 2-PHENYL- | | | | | 9 | 136 | 0.16 | 0.84 | | | | |
| HC | SVOC | (TIC) NAPHTHALENE, DECAHYDRO-, TRANS- | | | | | 3 | 136 | 0.23 | 13 | | | | |
| HC | SVOC | (TIC) NAPHTHALENE, DECAHYDRO-2-METHYL- | | | | | 3 | 136 | 0.38 | 0.7 | | | | |
| HC | SVOC | (TIC) NAPHTHALENE, DECAHYDRO-4A-METHYL-1-METHY | | | | | 1 | 136 | 0.9 | 0.9 | | | | |
| HC | SVOC | (TIC) NAPHTHALENE,1,2,3,4,4A,5,6,8A-OCTAHYDRO | 2 | 300 | 0.12 | 0.66 | | | | | | | | |
| HC | SVOC | (TIC) NAPHTHALENE,1,2,3,5,6,8A-HEXAHYDRO-4,7- | 1 | 300 | 0.25 | 0.25 | | | | | | | | |
| HC | SVOC | (TIC) NAPHTHALENE,1,2,4A,5,6,8A-HEXAHYDRO-4,7 | 4 | 300 | 0.12 | 1.9 | | | | | | | | |
| HC | SVOC | (TIC) NAPHTHALENE,2-PHENYL- | | | | | 1 | 136 | 0.084 | 0.084 | | | | |
| HC | SVOC | (TIC) N-HEXADECANOIC ACID | 23 | 300 | 0.13 | 5.2 | | | | | | | | |
| HC | SVOC | (TIC) N-HEXADECANOICACID | 20 | 300 | 0.098 | 1.6 | 1 | 136 | 0.15 | 0.15 | | | | |
| HC | SVOC | (TIC) N-HEXDECANOIC ACID | 1 | 300 | 0.39 | 0.39 | | | | | | | | |
| HC | SVOC | (TIC) OCTADECANAL | 4 | 300 | 0.21 | 0.5 | 11 | 136 | 0.26 | 2.7 | | | | |
| HC | SVOC | (TIC) OCTADECANOIC ACID | 1 | 300 | 1.1 | 1.1 | 5 | 136 | 0.65 | 1.7 | | | | |
| HC | SVOC | (TIC) OCTADECANOIC ACID, 2-OXO-, METHYL ESTER | | | | | 1 | 136 | 2.4 | 2.4 | | | | |
| HC | SVOC | (TIC) OCTADECANOICACID | 4 | 300 | 0.083 | 0.91 | | | | | | | | |
| HC | SVOC | (TIC) OCTADECANOICACID,2-METHYLPROPYLESTER | 1 | 300 | 0.17 | 0.17 | | | | | | | | |
| HC | SVOC | (TIC) OCTADECANOICACID,BUTYLESTER | 2 | 300 | 0.11 | 0.19 | | | | | | | | |
| HC | SVOC | (TIC) OCTADECYL ESTER BROMOACETIC | 1 | 300 | 0.7 | 0.7 | | | | | | | | |
| HC | SVOC | (TIC) OCTAHYDRONAPHTHALENEISOMER | 1 | 300 | 5.8 | 5.8 | | | | | | | | |
| HC | SVOC | (TIC) OLEAN-12-ENE | 1 | 300 | 1.2 | 1.2 | 3 | 136 | 1 | 7.4 | | | | |
| HC | SVOC | (TIC) OLEIC ACID | 1 | 300 | 0.16 | 0.16 | 1 | 136 | 6 | 6 | | | | |
| HC | SVOC | (TIC) OLEYL ALCOHOL | | | | | 2 | 136 | 0.72 | 0.91 | | | | |
| HC | SVOC | (TIC) O-TERPHENYL | | | | | 3 | 136 | 0.34 | 1.3 | | | | |
| HC | SVOC | (TIC) OXACYCLOHEPTADECAN-2-ONE | | | | | 1 | 136 | 3.7 | 3.7 | | | | |
| HC | SVOC | (TIC) OXIRANE, [(DODECYLOXY)MET | | | | | 1 | 136 | 4.6 | 4.6 | | | | |
| HC | SVOC | (TIC) OXIRANE, HEXADECYL- | 1 | 300 | 12 | 12 | 5 | 136 | 0.56 | 2.5 | | | | |
| HC | SVOC | (TIC) OXIRANE, TETRADECYL- | | | | | 2 | 136 | 1.5 | 4.3 | | | | |
| HC | SVOC | (TIC) PALMITALDEHYDE, DIISOPROPYL ACETAL | | | | | 2 | 136 | 0.99 | 1.7 | | | | |
| HC | SVOC | (TIC) PENTADECANAL- | 1 | 300 | 0.19 | 0.19 | 5 | 136 | 0.37 | 2 | | | | |
| HC | SVOC | (TIC) PENTADECANE | | | | | 1 | 136 | 0.83 | 0.83 | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| HC | SVOC | (TIC) PENTADECANOIC ACID | | | | | 1 | 136 | 0.29 | 0.29 | | | | |
| HC | SVOC | (TIC) PENTANOIC ACID, 2-METHYL- | | | | | 1 | 136 | 0.36 | 0.36 | | | | |
| HC | SVOC | (TIC) PERYLENE | | | | | 30 | 136 | 0.24 | 5 | | | | |
| HC | SVOC | (TIC) PHENANTHRENE, 1,2,3,4,4A,9,10,10A-OCTAHY | | | | | 1 | 136 | 2.4 | 2.4 | | | | |
| HC | SVOC | (TIC) PHENANTHRENE, 1-METHYL- | | | | | 1 | 136 | 0.62 | 0.62 | | | | |
| HC | SVOC | (TIC) PHENANTHRENE, 1-METHYL-7-(1-METHYLETHYL) | | | | | 2 | 136 | 0.59 | 1.2 | | | | |
| HC | SVOC | (TIC) PHENANTHRENE, 2,3-DIMETHYL- | | | | | 1 | 136 | 0.98 | 0.98 | | | | |
| HC | SVOC | (TIC) PHENANTHRENE, 2,4,5,7-TETRAMETHYL- | | | | | 5 | 136 | 0.37 | 1.6 | | | | |
| HC | SVOC | (TIC) PHENANTHRENE, 2,5-DIMETHYL- | | | | | 4 | 136 | 0.14 | 1.1 | | | | |
| HC | SVOC | (TIC) PHENANTHRENE, 2,7-DIMETHYL- | | | | | 1 | 136 | 0.65 | 0.65 | | | | |
| HC | SVOC | (TIC) PHENANTHRENE, 2-METHYL- | | | | | 6 | 136 | 0.14 | 0.61 | | | | |
| HC | SVOC | (TIC) PHENANTHRENE, 3,6-DIMETHYL- | | | | | 2 | 136 | 0.27 | 0.56 | | | | |
| HC | SVOC | (TIC) PHENANTHRENE, 3-METHYL- | | | | | 8 | 136 | 0.1 | 0.92 | | | | |
| HC | SVOC | (TIC) PHENANTHRENE, 4-METHOXY- | | | | | 1 | 136 | 0.46 | 0.46 | | | | |
| HC | SVOC | (TIC) PHENANTHRENE, 4-METHYL- | | | | | 2 | 136 | 0.36 | 0.47 | | | | |
| HC | SVOC | (TIC) PHENANTHRENE,2,5-DIMETHYL- | 1 | 300 | 1 | 1 | | | | | | | | |
| HC | SVOC | (TIC) PHENOL, 4-(1,1,3,3-TETRAMETHYLBUTYL)- | | | | | 6 | 136 | 0.16 | 5.7 | | | | |
| HC | SVOC | (TIC) PHENOL, 4-(2,2,3,3-TETRAMETHYLBUTYL)- | | | | | 3 | 136 | 0.57 | 3.9 | | | | |
| HC | SVOC | (TIC) PHENOL, 4-(2,2,4-TRIMETHYLPENTYL)- | | | | | 4 | 136 | 0.62 | 6.1 | | | | |
| HC | SVOC | (TIC) PHENOL, 4,4-(1-METHYLETHYLIDENE)BIS | | | | | 1 | 136 | 0.42 | 0.42 | | | | |
| HC | SVOC | (TIC) PHENOL, 4,4-(1-METHYLETHYLIDENE)BIS- | | | | | 1 | 136 | 0.37 | 0.37 | | | | |
| HC | SVOC | (TIC) PHENOL, NONYL- | | | | | 7 | 136 | 0.36 | 80 | | | | |
| HC | SVOC | (TIC) PHENOL,2,2-METHYLENEBIS(6-(1,1-DIMETHY) | 1 | 300 | 0.43 | 0.43 | | | | | | | | |
| HC | SVOC | (TIC) PHENOL,2,6-DIMETHOXY-4-(2-PROPENYL)- | 1 | 300 | 0.63 | 0.63 | | | | | | | | |
| HC | SVOC | (TIC) PHENOL,4-(2-PROPENYL)- | 4 | 300 | 0.22 | 0.97 | | | | | | | | |
| HC | SVOC | (TIC) PHENOL,4-METHYL- | 1 | 300 | 1.3 | 1.3 | | | | | | | | |
| HC | SVOC | (TIC) PHOSPHONIC ACID, DIOCTADE | | | | | 1 | 136 | 1.2 | 1.2 | | | | |
| HC | SVOC | (TIC) PHOSPHONIC ACID, DIOCTADECYL ESTER | | | | | 1 | 136 | 1.6 | 1.6 | | | | |
| HC | SVOC | (TIC) PHYTOL | | | | | 1 | 136 | 3.2 | 3.2 | | | | |
| HC | SVOC | (TIC) PREGN-4-ENE-3,20-DIONE, (9.BETA.,10.ALPH | | | | | 1 | 136 | 4.4 | 4.4 | | | | |
| HC | SVOC | (TIC) PREGNAN-18-OL, (5.ALPHA.)- | | | | | 1 | 136 | 1.7 | 1.7 | | | | |
| HC | SVOC | (TIC) PROPANOICACID,3-MERCAPTO-,DODECYLEST | 13 | 300 | 0.13 | 2.2 | | | | | | | | |
| HC | SVOC | (TIC) PYRENE, 1,3-DIMETHYL- | | | | | 1 | 136 | 1.9 | 1.9 | | | | |
| HC | SVOC | (TIC) PYRENE, 1-METHYL- | | | | | 4 | 136 | 0.29 | 1.6 | | | | |
| HC | SVOC | (TIC) PYRENE, 2-METHYL- | | | | | 7 | 136 | 0.15 | 1.9 | | | | |
| HC | SVOC | (TIC) PYRENE, 4-METHYL- | | | | | 2 | 136 | 0.9 | 1.2 | | | | |
| HC | SVOC | (TIC) SELINA-6-EN-4-OL | 1 | 300 | 0.96 | 0.96 | | | | | | | | |
| HC | SVOC | (TIC) SIGMAST-4-EN-3-ONE | 1 | 300 | 2.2 | 2.2 | | | | | | | | |
| HC | SVOC | (TIC) SITOSTEROL DERIVATIVE | 1 | 300 | 1.7 | 1.7 | | | | | | | | |
| HC | SVOC | (TIC) SQUALENE | 4 | 300 | 0.56 | 2.6 | | | | | | | | |
| HC | SVOC | (TIC) STIGMAST-4-EN-30ONE | 1 | 300 | 0.33 | 0.33 | | | | | | | | |
| HC | SVOC | (TIC) STIGMAST-4-EN-3ONE | 1 | 300 | 0.39 | 0.39 | | | | | | | | |
| HC | SVOC | (TIC) STIGMAST-4-EN-3-ONE | 71 | 300 | 0.14 | 33 | 68 | 136 | 0.16 | 8.2 | | | | |
| HC | SVOC | (TIC) STIGMAST-4-EN-ONE | 1 | 300 | 1.6 | 1.6 | | | | | | | | |
| HC | SVOC | (TIC) STIGMAST-7-EN-3-OL, (3.BETA.,5.ALPHA.,24 | | | | | 1 | 136 | 0.38 | 0.38 | | | | |
| HC | SVOC | (TIC) STIGMASTANOL | 10 | 300 | 0.96 | 10 | | | | | | | | |
| HC | SVOC | (TIC) STIGMASTEROL | 38 | 300 | 0.18 | 14 | 35 | 136 | 0.3 | 7.7 | | | | |
| HC | SVOC | (TIC) STIGMASTEROL, 22,23-DIHYDRO- | 3 | 300 | 1.1 | 2.1 | | | | | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| HC | SVOC | (TIC) STIGMASTEROL,22,23-DIHYDRO- | 4 | 300 | 0.2 | 4.5 | | | | | | | | |
| HC | SVOC | (TIC) STIMAST-4-EN-3-ONE | 3 | 300 | 0.68 | 1.9 | | | | | | | | |
| HC | SVOC | (TIC) STIMASTEROL | 1 | 300 | 0.83 | 0.83 | | | | | | | | |
| HC | SVOC | (TIC) SULFUR | | | | | 2 | 136 | 0.46 | 12 | | | | |
| HC | SVOC | (TIC) SULFUR, MOL. (S8) | | | | | 12 | 136 | 0.2 | 1.1 | | | | |
| HC | SVOC | (TIC) SUSPECTED ALDOL COND PROCUCT | 1 | 300 | 19 | 19 | | | | | | | | |
| HC | SVOC | (TIC) SUSPECTED ALDOL COND PRODUCT | 59 | 300 | 0.32 | 60 | | | | | | | | |
| HC | SVOC | (TIC) SUSPECTED ALDOL COND.PRODUCT | 13 | 300 | 8 | 58 | | | | | | | | |
| HC | SVOC | (TIC) TARAXASTEROL | | | | | 5 | 136 | 2.8 | 7.1 | | | | |
| HC | SVOC | (TIC) TARAXEROL | | | | | 35 | 136 | 0.37 | 17 | | | | |
| HC | SVOC | (TIC) TESTOSTERONE | 4 | 300 | 0.25 | 4.1 | 4 | 136 | 0.76 | 5.7 | | | | |
| HC | SVOC | (TIC) TESTOSTERONE CYPIONATE | 1 | 300 | 1.7 | 1.7 | | | | | | | | |
| HC | SVOC | (TIC) TETRACOSANOIC ACID | 9 | 300 | 0.42 | 2 | | | | | | | | |
| HC | SVOC | (TIC) TETRADECANAL | | | | | 1 | 136 | 1 | 1 | | | | |
| HC | SVOC | (TIC) TETRADECANOIC ACID | | | | | 6 | 136 | 0.87 | 4.5 | | | | |
| HC | SVOC | (TIC) TETRADECANOIC ACID, HEXADECYL ESTER | | | | | 1 | 136 | 0.78 | 0.78 | | | | |
| HC | SVOC | (TIC) TETRAHYDRODIMETHYLNAPHTHALENEISOMER | 2 | 300 | 0.3 | 13 | | | | | | | | |
| HC | SVOC | (TIC) TRANS-CARYOPHYLLENE | 13 | 300 | 0.57 | 18 | | | | | | | | |
| HC | SVOC | (TIC) TRIALLYLMETHYLSILANE | | | | | 1 | 136 | 0.48 | 0.48 | | | | |
| HC | SVOC | (TIC) TRICOSANOIC ACID | 2 | 300 | 0.4 | 1.2 | | | | | | | | |
| HC | SVOC | (TIC) TRICYCLO[3.3.1.13,7]DECANE, 1-NITRO- | | | | | 1 | 136 | 0.17 | 0.17 | | | | |
| HC | SVOC | (TIC) TRIDECANOICACID | 2 | 300 | 0.55 | 0.77 | | | | | | | | |
| HC | SVOC | (TIC) TRIPHENYLENE, 2-METHYL- | | | | | 2 | 136 | 0.8 | 1.1 | | | | |
| HC | SVOC | (TIC) UNKNOWN | 298 | 300 | 0.14 | 340 | 135 | 136 | 0.34 | 98 | 1 | 2 | 0.003 | 0.003 |
| HC | SVOC | (TIC) UNKNOWN ACETATE DERIVATIVE | 5 | 300 | 0.54 | 1.9 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN ACETIC ACID | 1 | 300 | 5.2 | 5.2 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN ACID | 20 | 300 | 0.23 | 6.5 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN ALCOHOL | 5 | 300 | 0.23 | 0.74 | 70 | 136 | 0.36 | 12 | | | | |
| HC | SVOC | (TIC) UNKNOWN ALDEHYDE | 2 | 300 | 0.48 | 4.8 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN ALDOL CONDENSATE | 49 | 300 | 0.78 | 5.8 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN ALIPHATIC ACID | | | | | 3 | 136 | 0.22 | 4.9 | | | | |
| HC | SVOC | (TIC) UNKNOWN ALIPHATIC ALDEHYDE | | | | | 26 | 136 | 0.25 | 2.7 | | | | |
| HC | SVOC | (TIC) UNKNOWN ALIPHATIC COMPOUND | | | | | 60 | 136 | 0.12 | 13 | | | | |
| HC | SVOC | (TIC) UNKNOWN ALIPHATIC ESTER | | | | | 1 | 136 | 2.7 | 2.7 | | | | |
| HC | SVOC | (TIC) UNKNOWN ALIPHATIC KETONE | | | | | 50 | 136 | 0.24 | 5.9 | | | | |
| HC | SVOC | (TIC) UNKNOWN ALKANE | 40 | 300 | 0.11 | 12 | 133 | 136 | 0.26 | 36 | | | | |
| HC | SVOC | (TIC) UNKNOWN ALKANE DERIVATIVE | 2 | 300 | 0.59 | 8.9 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN ALKENE | 11 | 300 | 0.25 | 6.5 | 4 | 136 | 0.15 | 1.1 | | | | |
| HC | SVOC | (TIC) UNKNOWN ALKYLCYCLOHEXANE | | | | | 2 | 136 | 0.13 | 2.5 | | | | |
| HC | SVOC | (TIC) UNKNOWN ALKYLPHENOL | | | | | 1 | 136 | 1.2 | 1.2 | | | | |
| HC | SVOC | (TIC) UNKNOWN ALKYNE | 5 | 300 | 0.35 | 0.76 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN AMID | 1 | 300 | 0.5 | 0.5 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN AMIDE | 22 | 300 | 0.14 | 1 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN AMINE | 4 | 300 | 0.48 | 1.5 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN AMYRIN ISOMER | 2 | 300 | 2.1 | 3.9 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN AROMATIC AMINE | | | | | 1 | 136 | 1.1 | 1.1 | | | | |
| HC | SVOC | (TIC) UNKNOWN AROMATIC COMPOUND | | | | | 3 | 136 | 0.34 | 1.2 | | | | |
| HC | SVOC | (TIC) UNKNOWN AZULENE DERIVATIVE | 1 | 300 | 0.93 | 0.93 | | | | | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| HC | SVOC | (TIC) UNKNOWN BENZALDEHYDE DERIVAT | 1 | 300 | 0.25 | 0.25 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN BENZENAMINE DERIVATI | 1 | 300 | 2.2 | 2.2 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN BENZENE DERIVATIVE | 6 | 300 | 0.15 | 5.4 | 2 | 136 | 1.2 | 4.8 | | | | |
| HC | SVOC | (TIC) UNKNOWN BENZODIOXOLE DERIVAT | 1 | 300 | 5.3 | 5.3 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN BENZOFLUORANTHENE | | | | | 3 | 136 | 0.51 | 1.5 | | | | |
| HC | SVOC | (TIC) UNKNOWN BENZOFLUORENE | | | | | 1 | 136 | 0.46 | 0.46 | | | | |
| HC | SVOC | (TIC) UNKNOWN BRANCHED ALKANE | 9 | 300 | 0.083 | 5.4 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN BUTANE | 3 | 300 | 1.8 | 4.2 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN C4-ALKYLBENZENE | | | | | 1 | 136 | 0.58 | 0.58 | | | | |
| HC | SVOC | (TIC) UNKNOWN CARBOXALDEHYDE DERIV | 1 | 300 | 1 | 1 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN CHOLATE DERIVATIVE | 1 | 300 | 1.7 | 1.7 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN CHOLESTAN DERIVATIVE | 3 | 300 | 5 | 84 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN CHOLESTANE DERIVATIV | 4 | 300 | 0.54 | 6.7 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN CHOLESTANE DERIVATIVE | | | | | 1 | 136 | 4.8 | 4.8 | | | | |
| HC | SVOC | (TIC) UNKNOWN CHOLESTANOL DERIVATI | 1 | 300 | 0.92 | 0.92 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN COSANONE | 1 | 300 | 2 | 2 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN CYCLOALKANE | 17 | 300 | 0.15 | 8.2 | 28 | 136 | 0.17 | 11 | | | | |
| HC | SVOC | (TIC) UNKNOWN CYCLOHEXANE DERIVATI | 5 | 300 | 0.38 | 1.7 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN DECAHYDRONAPHTHALENE | | | | | 1 | 136 | 0.46 | 0.46 | | | | |
| HC | SVOC | (TIC) UNKNOWN DECANAL | 8 | 300 | 0.15 | 3.4 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN DECENAL | 4 | 300 | 0.26 | 5 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN DIENE | 6 | 300 | 0.12 | 2 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN DIONE | 3 | 300 | 0.23 | 2.9 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN EICOSENE | 1 | 300 | 2.8 | 2.8 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN GUANIDINE DERIVATIVE | 1 | 300 | 0.13 | 0.13 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN HYDOCARBON | 1 | 300 | 0.12 | 0.12 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN HYDROCARBON | 32 | 300 | 0.084 | 9.2 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN INDENE DERIVATIVE | 2 | 300 | 0.48 | 4.4 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN KETONE | 2 | 300 | 0.75 | 1.3 | 1 | 136 | 1.3 | 1.3 | | | | |
| HC | SVOC | (TIC) UNKNOWN METHANONE DERIVATIVE | 2 | 300 | 0.52 | 14 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN NAPHTHALENE | 3 | 300 | 1.2 | 1.8 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN NAPHTHALENE DERIVATI | 9 | 300 | 0.22 | 3.5 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN NAPHTHALENE DERIVATIVE | | | | | 4 | 136 | 0.37 | 3.6 | | | | |
| HC | SVOC | (TIC) UNKNOWN NITRILE DERIVATIVE | 1 | 300 | 0.49 | 0.49 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN ORGANIC ACID | 8 | 300 | 0.14 | 2.4 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN OXIRANE | 15 | 300 | 0.22 | 28 | 1 | 136 | 0.43 | 0.43 | | | | |
| HC | SVOC | (TIC) UNKNOWN OXIRANE DERIVATIVE | 2 | 300 | 0.32 | 0.91 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN PAH | 42 | 300 | 0.093 | 9.9 | 30 | 136 | 0.21 | 5.1 | | | | |
| HC | SVOC | (TIC) UNKNOWN PAH DERIVATIVE | 14 | 300 | 0.15 | 1.8 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN PHENOL | 1 | 300 | 0.38 | 0.38 | 1 | 136 | 0.35 | 0.35 | | | | |
| HC | SVOC | (TIC) UNKNOWN PHENOL DERIVATIVE | 3 | 300 | 0.99 | 2.8 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN PHOSPHINE | 1 | 300 | 0.098 | 0.098 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN POLYCYCLIC HYDROCARBON | | | | | 16 | 136 | 0.45 | 9.1 | | | | |
| HC | SVOC | (TIC) UNKNOWN POLYTERPENE DERIVATIVE | | | | | 111 | 136 | 0.18 | 75 | | | | |
| HC | SVOC | (TIC) UNKNOWN PROPANOL DERIVATIVE | 4 | 300 | 0.2 | 0.94 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN QUINOLINE DERIVATIVE | 1 | 300 | 0.14 | 0.14 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN SITOSTEROL DERIVATIV | 3 | 300 | 0.36 | 8.8 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN SITOSTEROL ISOMER | 21 | 300 | 0.28 | 17 | | | | | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| HC | SVOC | (TIC) UNKNOWN STERANE DERIVATIVE | | | | | 16 | 136 | 0.57 | 5.9 | | | | |
| HC | SVOC | (TIC) UNKNOWN STEROL | 7 | 300 | 0.36 | 10 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN STEROL DERIVATIVE | 2 | 300 | 0.33 | 1.6 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN STIGMASTEROL DERIVAT | 4 | 300 | 0.96 | 3.6 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN STRAIGHT CHAIN ALKANE | 49 | 300 | 0.26 | 24 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN SUBSTITUTED BENZODIOXOLE | 1 | 300 | 0.46 | 0.46 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN SUBSTITUTED COSANONE | 1 | 300 | 3.6 | 3.6 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN SUBSTITUTED NAPTHALENE | 1 | 300 | 0.29 | 0.29 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN SUBSTITUTED OXIRANE | 1 | 300 | 0.65 | 0.65 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN SUBSTITUTED THIOPHENE | 1 | 300 | 0.23 | 0.23 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN TERPENE | | | | | 1 | 136 | 0.35 | 0.35 | | | | |
| HC | SVOC | (TIC) UNKNOWN THIOL | 1 | 300 | 0.22 | 0.22 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWN TRIENE | 1 | 300 | 1.7 | 1.7 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWNADIPATE | 1 | 300 | 0.32 | 0.32 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWNALDEHYDE | 7 | 300 | 0.17 | 1.7 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWNALDOLCONDENSATE | 151 | 300 | 2.7 | 83 | 1 | 136 | 1.6 | 1.6 | | | | |
| HC | SVOC | (TIC) UNKNOWNALKANE | 144 | 300 | 0.16 | 52 | 1 | 136 | 1 | 1 | | | | |
| HC | SVOC | (TIC) UNKNOWNALKANE/C20H12PAH | 1 | 300 | 0.87 | 0.87 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWNALKANE/UNKNOWN | 6 | 300 | 0.16 | 0.57 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWNALKENE | 17 | 300 | 0.11 | 6.8 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWNAMIDE | 13 | 300 | 0.086 | 0.28 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWNCYCLOALKANE | 5 | 300 | 0.3 | 2.8 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWNORGANICACID | 1 | 300 | 0.5 | 0.5 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWNPHTHALATE | 1 | 300 | 1 | 1 | | | | | | | | |
| HC | SVOC | (TIC) UNKNOWNSTEROL | 73 | 300 | 0.11 | 45 | | | | | | | | |
| HC | SVOC | (TIC) UNKNWON ACID | 44 | 300 | 0.14 | 4.1 | | | | | | | | |
| HC | SVOC | (TIC) UNKNWON KETONE | | | | | 5 | 136 | 0.16 | 1.3 | | | | |
| HC | SVOC | (TIC) UNKOWN | 1 | 300 | 0.39 | 0.39 | | | | | | | | |
| HC | SVOC | (TIC) UNKOWN ACID | 1 | 300 | 0.9 | 0.9 | | | | | | | | |
| HC | SVOC | (TIC) UNKOWN ALKANE | 1 | 300 | 0.21 | 0.21 | | | | | | | | |
| HC | SVOC | (TIC) UNKOWN ALKYNE | 1 | 300 | 0.84 | 0.84 | | | | | | | | |
| HC | SVOC | (TIC) UNKOWN CYCLOHEXANE DERIVATIV | 1 | 300 | 0.09 | 0.09 | | | | | | | | |
| HC | SVOC | (TIC) UNKOWN PAH | 1 | 300 | 0.39 | 0.39 | | | | | | | | |
| HC | SVOC | (TIC) UNKOWN SITOSTEROL DERIVATIVE | 1 | 300 | 0.25 | 0.25 | | | | | | | | |
| HC | SVOC | (TIC) URS-12-ENE | 1 | 300 | 0.42 | 0.42 | | | | | | | | |
| HC | SVOC | (TIC) VITAMIN E | 1 | 300 | 0.81 | 0.81 | 15 | 136 | 0.42 | 7.2 | | | | |
| HC | SVOC | (TIC) VITAMINE | 32 | 300 | 0.1 | 1.7 | | | | | | | | |
| HC | SVOC | (TIC) Z-11-HEXADECENOIC ACID | 4 | 300 | 0.38 | 6.8 | | | | | | | | |
| HC | SVOC | (TIC) Z-5-NONADECENE | 1 | 300 | 1.5 | 1.5 | | | | | | | | |
| HC | VOC | (TIC) .BETA.-PINENE | 2 | 33 | 0.36 | 0.42 | | | | | | | | |
| HC | VOC | (TIC) 1,3-CYCLOHEXADIENE,1-METHYL-4-(1-METHYL | 1 | 33 | 0.013 | 0.013 | | | | | | | | |
| HC | VOC | (TIC) 1S-.ALPHA.-PINENE | 1 | 33 | 0.21 | 0.21 | | | | | | | | |
| HC | VOC | (TIC) 2-PROPANOL | 1 | 33 | 0.0054 | 0.0054 | | | | | | | | |
| HC | VOC | (TIC) 3-CARENE | 2 | 33 | 0.22 | 0.24 | | | | | | | | |
| HC | VOC | (TIC) 3-OCTANONE | | | | | 1 | 48 | 0.018 | 0.018 | | | | |
| HC | VOC | (TIC) AROMATIC DERIVATIVE | 8 | 33 | 0.024 | 0.16 | | | | | | | | |
| HC | VOC | (TIC) BENZENE, 1-METHYL-4-(1-METHYLETHYL)- | | | | | 1 | 48 | 0.012 | 0.012 | | | | |
| HC | VOC | (TIC) BICYCLO[2.2.1]HEPTANE,7,7-DIMETHYL-2-MET | 2 | 33 | 0.11 | 0.11 | | | | | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| HC | VOC | (TIC) BICYCLO[4.1.0]HEPT-2-ENE,3,7,7-TRIMETHYL | 1 | 33 | 0.012 | 0.012 | | | | | | | | |
| HC | VOC | (TIC) C10H10O2UNKNOWN | 1 | 33 | 0.0092 | 0.0092 | | | | | | | | |
| HC | VOC | (TIC) C10H14AROMATIC | 4 | 33 | 0.0059 | 0.024 | | | | | | | | |
| HC | VOC | (TIC) C10H16UNKNOWN | 10 | 33 | 0.015 | 1.4 | | | | | | | | |
| HC | VOC | (TIC) C10H20CYCLOALKANE | 1 | 33 | 0.032 | 0.032 | | | | | | | | |
| HC | VOC | (TIC) C11H16OUNKNOWN | 5 | 33 | 0.007 | 0.029 | | | | | | | | |
| HC | VOC | (TIC) C15H24UNKNOWN | 9 | 33 | 0.01 | 1.2 | | | | | | | | |
| HC | VOC | (TIC) CAMPHENE | 2 | 33 | 0.016 | 0.018 | 1 | 48 | 0.068 | 0.068 | | | | |
| HC | VOC | (TIC) CHLORODIFLUOROMETHANE | 5 | 33 | 0.006 | 0.18 | | | | | | | | |
| HC | VOC | (TIC) CYCLOHEXENE,1-METHYL-4-(1-METHYLETHYLIDE | 2 | 33 | 0.041 | 0.044 | | | | | | | | |
| HC | VOC | (TIC) DECAHYDRODIMETHYLNAPHTHALENEISOMER | 1 | 33 | 0.015 | 0.015 | | | | | | | | |
| HC | VOC | (TIC) DECAHYDROMETHYLNAPHTHALENEISOMER | 1 | 33 | 0.032 | 0.032 | | | | | | | | |
| HC | VOC | (TIC) DECAHYDRONAPHTHALENEISOMER | 1 | 33 | 0.014 | 0.014 | | | | | | | | |
| HC | VOC | (TIC) D-LIMONENE | 2 | 33 | 0.077 | 0.08 | | | | | | | | |
| HC | VOC | (TIC) HEXANE | 8 | 33 | 0.014 | 0.24 | | | | | | | | |
| HC | VOC | (TIC) ISOCAMPHANE | | | | | 1 | 48 | 0.32 | 0.32 | | | | |
| HC | VOC | (TIC) SATURATED HYDROCARBON | 5 | 33 | 0.009 | 0.034 | | | | | | | | |
| HC | VOC | (TIC) TRIMETHYLSILANOL | 1 | 33 | 0.006 | 0.006 | | | | | | | | |
| HC | VOC | (TIC) UNKNOWN | 9 | 33 | 0.0062 | 0.058 | 24 | 48 | 0.012 | 0.76 | | | | |
| HC | VOC | (TIC) UNKNOWN ALKANE | | | | | 27 | 48 | 0.007 | 0.17 | | | | |
| HC | VOC | (TIC) UNKNOWN AROMATIC COMPOUND | 1 | 33 | 0.013 | 0.013 | | | | | | | | |
| HC | VOC | (TIC) UNKNOWN C4-ALKYLBENZENE | | | | | 1 | 48 | 0.29 | 0.29 | | | | |
| HC | VOC | (TIC) UNKNOWN CYCLOALKANE | | | | | 1 | 48 | 0.068 | 0.068 | | | | |
| HC | VOC | (TIC) UNKNOWN SILOXANE DERIVATIVE | | | | | 9 | 48 | 0.012 | 0.087 | | | | |
| HC | VOC | (TIC) UNKNOWN SUBSTITUTED BENZENE | 2 | 33 | 0.022 | 0.051 | | | | | | | | |
| HC | VOC | (TIC) UNKNOWNALKANE | 3 | 33 | 0.012 | 0.095 | | | | | | | | |
| HC | VOC | (TIC) UNKNOWNCYCLOALKANE | 1 | 33 | 0.023 | 0.023 | | | | | | | | |
| HC | VOC | (TIC) UNKNOWNSILOXANE | 18 | 33 | 0.0058 | 0.28 | | | | | | | | |
| HC | VOC | (TIC) UNSATURATED HYDROCARBON | 1 | 33 | 0.076 | 0.076 | | | | | | | | |
| KWL | SVOC | (TIC) .ALPHA.-AMYRIN | | | | | 8 | 122 | 7 | 18 | | | | |
| KWL | SVOC | (TIC) .BETA.-AMYRIN | | | | | 3 | 122 | 3.4 | 28 | | | | |
| KWL | SVOC | (TIC) .BETA.-SITOSTEROL | | | | | 4 | 122 | 1.2 | 17 | | | | |
| KWL | SVOC | (TIC) .GAMMA.-SITOSTEROL | | | | | 74 | 122 | 0.34 | 73 | | | | |
| KWL | SVOC | (TIC) [2.2]PARACYCLOPHANE | | | | | 3 | 122 | 2.8 | 4.3 | | | | |
| KWL | SVOC | (TIC) 1,2-BENZENEDICARBOXYLIC ACID, 3-NITRO- | | | | | 1 | 122 | 0.13 | 0.13 | | | | |
| KWL | SVOC | (TIC) 1,2-BENZENEDICARBOXYLIC ACID, BIS(2-METH | | | | | 1 | 122 | 3.5 | 3.5 | | | | |
| KWL | SVOC | (TIC) 1,2-BENZENEDICARBOXYLIC ACID, DIISOOCTYL | | | | | 1 | 122 | 3.9 | 3.9 | | | | |
| KWL | SVOC | (TIC) 1,3-BENZODIOXOLE,5-(2-PROPENYL)- | 3 | 33 | 0.093 | 1.7 | | | | | | | | |
| KWL | SVOC | (TIC) 1,6-CYCLODECADIENE,1-METHYL-5-METHYLENE | 1 | 33 | 0.087 | 0.087 | | | | | | | | |
| KWL | SVOC | (TIC) 11H-BENZO[A]FLUORENE | | | | | 2 | 122 | 0.21 | 0.3 | | | | |
| KWL | SVOC | (TIC) 11H-BENZO[B]FLUORENE | | | | | 5 | 122 | 0.27 | 1.2 | | | | |
| KWL | SVOC | (TIC) 11H-BENZOCARBAZOLEISOMER | | | | | 1 | 122 | 3.2 | 3.2 | | | | |
| KWL | SVOC | (TIC) 11H-INDENO[2,1-A]PHENANTHRENE | | | | | 1 | 122 | 2.4 | 2.4 | | | | |
| KWL | SVOC | (TIC) 11-TRICOSENE | | | | | 1 | 122 | 8.7 | 8.7 | | | | |
| KWL | SVOC | (TIC) 17-OCTADECENAL | | | | | 1 | 122 | 1.8 | 1.8 | | | | |
| KWL | SVOC | (TIC) 1-DECENE | | | | | 1 | 122 | 0.13 | 0.13 | | | | |
| KWL | SVOC | (TIC) 1-DOCOSENE | | | | | 5 | 122 | 0.76 | 4.6 | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| KWL | SVOC | (TIC) 1-DODECANOL | | | | | 7 | 122 | 0.12 | 4.2 | | | | |
| KWL | SVOC | (TIC) 1-EICOSANOL | | | | | 2 | 122 | 4.3 | 6.4 | | | | |
| KWL | SVOC | (TIC) 1H-CYCLOPENTA[1,3]CYCLOPROPA[1,2]BENZENE | 3 | 33 | 0.17 | 0.61 | | | | | | | | |
| KWL | SVOC | (TIC) 1-HEXACOSENE | | | | | 3 | 122 | 1.9 | 2.5 | | | | |
| KWL | SVOC | (TIC) 1-NONADECANOL | | | | | 1 | 122 | 0.43 | 0.43 | | | | |
| KWL | SVOC | (TIC) 1-OCTADECENE | | | | | 1 | 122 | 6.3 | 6.3 | | | | |
| KWL | SVOC | (TIC) 1R-.ALPHA.-PINENE | 1 | 33 | 0.73 | 0.73 | | | | | | | | |
| KWL | SVOC | (TIC) 2,10-DODECADIEN-1-OL, 3,7,11-TRIMETHYL-, | | | | | 1 | 122 | 0.77 | 0.77 | | | | |
| KWL | SVOC | (TIC) 26-NOR-5-CHOLESTEN-3.BETA.25-ONE | | | | | 1 | 122 | 4.4 | 4.4 | | | | |
| KWL | SVOC | (TIC) 28-NOR-17.ALPHA.(H)-HOPANE | | | | | 17 | 122 | 0.68 | 16 | | | | |
| KWL | SVOC | (TIC) 28-NOR-17.BETA.(H)-HOPANE | | | | | 7 | 122 | 1.2 | 9 | | | | |
| KWL | SVOC | (TIC) 2-HEPTACOSANONE | | | | | 1 | 122 | 4.4 | 4.4 | | | | |
| KWL | SVOC | (TIC) 2-METHYLOCTADECANE | | | | | 1 | 122 | 10 | 10 | | | | |
| KWL | SVOC | (TIC) 2-NAPHTHALENEMETHANOL, DECAHYDRO-.ALPHA. | | | | | 6 | 122 | 7 | 16 | | | | |
| KWL | SVOC | (TIC) 2-PENTANONE, 4-HYDROXY-4-METHYL- | | | | | 88 | 122 | 6.8 | 150 | | | | |
| KWL | SVOC | (TIC) 2-PROPANOL, 1-(HEXADECYLOXY)- | | | | | 1 | 122 | 4.6 | 4.6 | | | | |
| KWL | SVOC | (TIC) 3-EICOSENE, (E)- | | | | | 1 | 122 | 5.1 | 5.1 | | | | |
| KWL | SVOC | (TIC) 4H-CYCLOPENTA[DEF]PHENANTHRENE | | | | | 3 | 122 | 0.19 | 0.53 | | | | |
| KWL | SVOC | (TIC) 4-NONYLPHENOL | | | | | 1 | 122 | 0.27 | 0.27 | | | | |
| KWL | SVOC | (TIC) 5(1H)-AZULENONE, 2,4,6,7,8,8A-HEXAHYDRO- | | | | | 2 | 122 | 2.2 | 9.6 | | | | |
| KWL | SVOC | (TIC) 5.ALPHA.,6.ALPHA.-EPOXYCHOLEST-7-EN-3.BE | | | | | 1 | 122 | 4.3 | 4.3 | | | | |
| KWL | SVOC | (TIC) 5-EICOSENE,(E)- | 1 | 33 | 0.73 | 0.73 | | | | | | | | |
| KWL | SVOC | (TIC) 5-OCTADECENE,(E)- | 1 | 33 | 0.18 | 0.18 | | | | | | | | |
| KWL | SVOC | (TIC) 7,12A-DIMETHYL-1,2,3,4,4A,11,12,12A-OCTA | 1 | 33 | 0.28 | 0.28 | | | | | | | | |
| KWL | SVOC | (TIC) 7H-BENZ[DE]ANTHRACEN-7-ONE | | | | | 1 | 122 | 0.16 | 0.16 | | | | |
| KWL | SVOC | (TIC) 7-TETRADECYNE | | | | | 1 | 122 | 7.8 | 7.8 | | | | |
| KWL | SVOC | (TIC) 9,10-ANTHRACENEDIONE | 1 | 33 | 0.092 | 0.092 | | | | | | | | |
| KWL | SVOC | (TIC) 9H-FLUORENE, 2-METHYL- | | | | | 1 | 122 | 0.82 | 0.82 | | | | |
| KWL | SVOC | (TIC) 9-OCTADECENAMIDE, (Z)- | | | | | 1 | 122 | 0.21 | 0.21 | | | | |
| KWL | SVOC | (TIC) 9-OCTADECENAMIDE,(Z)- | 1 | 33 | 0.11 | 0.11 | | | | | | | | |
| KWL | SVOC | (TIC) ALPHA-AMYRIN | 1 | 33 | 1.5 | 1.5 | | | | | | | | |
| KWL | SVOC | (TIC) ALPHA-CARYOPHYLLENE | 3 | 33 | 0.27 | 0.42 | | | | | | | | |
| KWL | SVOC | (TIC) ALPHA-CUBEBENE | 1 | 33 | 0.3 | 0.3 | | | | | | | | |
| KWL | SVOC | (TIC) ALPHA-PINENE | 4 | 33 | 0.4 | 1.5 | | | | | | | | |
| KWL | SVOC | (TIC) ANDROST-4-EN-3-ONE, 17-HYDROXY-, (10.ALP | | | | | 1 | 122 | 6.3 | 6.3 | | | | |
| KWL | SVOC | (TIC) ANTHRACENE, 2-ETHYL- | | | | | 1 | 122 | 0.4 | 0.4 | | | | |
| KWL | SVOC | (TIC) ANTHRACENE, 2-METHYL- | | | | | 1 | 122 | 0.49 | 0.49 | | | | |
| KWL | SVOC | (TIC) ANTHRACENE, 9-DODECYLTETRADECAHYDRO- | | | | | 2 | 122 | 2.9 | 7.3 | | | | |
| KWL | SVOC | (TIC) ANTHRACENE, 9-PHENYL- | | | | | 1 | 122 | 0.81 | 0.81 | | | | |
| KWL | SVOC | (TIC) BACCHARANE | | | | | 1 | 122 | 10 | 10 | | | | |
| KWL | SVOC | (TIC) BENZALDEHYDE | | | | | 2 | 122 | 0.09 | 0.15 | | | | |
| KWL | SVOC | (TIC) BENZENE, (1-BUTYLHEPTYL)- | | | | | 1 | 122 | 0.16 | 0.16 | | | | |
| KWL | SVOC | (TIC) BENZENE, (1-BUTYLOCTYL)- | | | | | 2 | 122 | 0.16 | 1.2 | | | | |
| KWL | SVOC | (TIC) BENZENE, (1-HEXYLHEPTYL)- | | | | | 1 | 122 | 1.3 | 1.3 | | | | |
| KWL | SVOC | (TIC) BENZENE, (1-PENTYLHEPTYL)- | | | | | 4 | 122 | 1.6 | 2.7 | | | | |
| KWL | SVOC | (TIC) BENZENE, 1,2-DICHLORO-3-ISOCYANATO- | | | | | 1 | 122 | 0.13 | 0.13 | | | | |
| KWL | SVOC | (TIC) BENZENEACETICACID | 5 | 33 | 0.097 | 1 | 1 | 122 | 0.26 | 0.26 | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| KWL | SVOC | (TIC) BENZENESULFONAMIDE, 4-METHYL- | | | | | 1 | 122 | 0.19 | 0.19 | | | | |
| KWL | SVOC | (TIC) BENZO(B)NAPHTHOTHIOPHENEISOMER | | | | | 2 | 122 | 1 | 2.3 | | | | |
| KWL | SVOC | (TIC) BENZO[B]NAPHTHO[2,1-D]THIOPHENE | | | | | 1 | 122 | 2.1 | 2.1 | | | | |
| KWL | SVOC | (TIC) BENZO[C]PHENANTHRENE | | | | | 2 | 122 | 0.32 | 0.88 | | | | |
| KWL | SVOC | (TIC) BENZO[E]PYRENE | | | | | 6 | 122 | 0.25 | 2.3 | | | | |
| KWL | SVOC | (TIC) BENZO[GHI]FLUORANTHENE | | | | | 1 | 122 | 0.47 | 0.47 | | | | |
| KWL | SVOC | (TIC) BENZOIC ACID | 8 | 33 | 0.089 | 1.9 | | | | | | | | |
| KWL | SVOC | (TIC) BETA-AMYRIN | 1 | 33 | 1.6 | 1.6 | | | | | | | | |
| KWL | SVOC | (TIC) BETA-PINENE | 1 | 33 | 1.9 | 1.9 | | | | | | | | |
| KWL | SVOC | (TIC) BETA-SITOSTEROL | 9 | 33 | 0.83 | 5 | 8 | 122 | 0.45 | 12 | | | | |
| KWL | SVOC | (TIC) BICYCLO[5.2.0]NONANE,2-METHYLENE-4,8,8- | 1 | 33 | 0.93 | 0.93 | | | | | | | | |
| KWL | SVOC | (TIC) BICYCLO[7.2.0]UNDEC-4-ENE,4,11,11-TRIME | 3 | 33 | 0.14 | 2.2 | | | | | | | | |
| KWL | SVOC | (TIC) BIS(2-ETHYLHEXYL) PHTHALATE | | | | | 16 | 122 | 0.13 | 6.7 | | | | |
| KWL | SVOC | (TIC) C(14A)-HOMO-27-NOR-14.BETA.-GAMMACERAN-3 | | | | | 1 | 122 | 1.3 | 1.3 | | | | |
| KWL | SVOC | (TIC) C15H10PAH | 1 | 33 | 0.11 | 0.11 | 1 | 122 | 1.3 | 1.3 | | | | |
| KWL | SVOC | (TIC) C15H12PAH | 1 | 33 | 0.087 | 0.087 | 1 | 122 | 6.2 | 6.2 | | | | |
| KWL | SVOC | (TIC) C17H10OKETONE | 1 | 33 | 0.096 | 0.096 | | | | | | | | |
| KWL | SVOC | (TIC) C17H12PAH | 1 | 33 | 0.085 | 0.085 | 2 | 122 | 0.7 | 9.5 | | | | |
| KWL | SVOC | (TIC) C18H12PAH | | | | | 1 | 122 | 2.1 | 2.1 | | | | |
| KWL | SVOC | (TIC) C19H14PAH | 1 | 33 | 0.085 | 0.085 | 1 | 122 | 3.1 | 3.1 | | | | |
| KWL | SVOC | (TIC) C20H12PAH | 5 | 33 | 0.096 | 0.45 | 3 | 122 | 1.5 | 7.7 | | | | |
| KWL | SVOC | (TIC) CAMPESTEROL | 4 | 33 | 0.2 | 0.52 | | | | | | | | |
| KWL | SVOC | (TIC) CAMPHENE | 1 | 33 | 0.08 | 0.08 | | | | | | | | |
| KWL | SVOC | (TIC) CARBAZOLE | | | | | 1 | 122 | 2.4 | 2.4 | | | | |
| KWL | SVOC | (TIC) CARYOPHYLLENE | 2 | 33 | 0.25 | 0.9 | | | | | | | | |
| KWL | SVOC | (TIC) CARYOPHYLLENEOXIDE | 1 | 33 | 0.2 | 0.2 | | | | | | | | |
| KWL | SVOC | (TIC) CHOLEST-5-ENE, 3-METHOXY-, (3.BETA.)- | | | | | 1 | 122 | 0.36 | 0.36 | | | | |
| KWL | SVOC | (TIC) CHOLESTA-5,22-DIEN-3-OL, (3.BETA.)- | | | | | 1 | 122 | 8 | 8 | | | | |
| KWL | SVOC | (TIC) CHOLESTAN-3.BETA.-OL | | | | | 2 | 122 | 1.4 | 2.9 | | | | |
| KWL | SVOC | (TIC) CHOLESTAN-3BETA-OL | | | | | 1 | 122 | 0.46 | 0.46 | | | | |
| KWL | SVOC | (TIC) CHOLESTAN-3-OL | | | | | 4 | 122 | 0.28 | 4.2 | | | | |
| KWL | SVOC | (TIC) CHOLESTAN-3-OL, 4-METHYL-, (3.BETA.,4.BE | | | | | 2 | 122 | 4 | 5.5 | | | | |
| KWL | SVOC | (TIC) CHOLESTAN-3-OL, ACETATE, (3.BETA.,5.ALPH | | | | | 4 | 122 | 4.2 | 19 | | | | |
| KWL | SVOC | (TIC) CHOLESTAN-3-ONE, 4,4-DIMETHYL-, (5.ALPHA | | | | | 1 | 122 | 14 | 14 | | | | |
| KWL | SVOC | (TIC) CHOLESTANE | | | | | 1 | 122 | 7.4 | 7.4 | | | | |
| KWL | SVOC | (TIC) CHOLESTANE, 14-METHYL-, (5.ALPHA.)- | | | | | 1 | 122 | 2.2 | 2.2 | | | | |
| KWL | SVOC | (TIC) CHOLESTANE, 3-(ETHYLTHIO)-, (3.BETA.,5.A | | | | | 2 | 122 | 7.4 | 16 | | | | |
| KWL | SVOC | (TIC) CHOLESTANE, 3-ETHOXY-, (3.BETA.,5.ALPHA. | | | | | 5 | 122 | 13 | 36 | | | | |
| KWL | SVOC | (TIC) CHOLESTANE, 4,5-EPOXY-, (4.ALPHA.,5.ALPH | | | | | 1 | 122 | 1.9 | 1.9 | | | | |
| KWL | SVOC | (TIC) CHOLESTANOL | | | | | 62 | 122 | 0.2 | 19 | | | | |
| KWL | SVOC | (TIC) CHOLESTEROL | | | | | 34 | 122 | 0.5 | 12 | | | | |
| KWL | SVOC | (TIC) CHONDRILLASTEROL | | | | | 6 | 122 | 1.5 | 8.5 | | | | |
| KWL | SVOC | (TIC) CHRYSENE, 4-METHYL- | | | | | 1 | 122 | 0.54 | 0.54 | | | | |
| KWL | SVOC | (TIC) CHRYSENE, 5-METHYL- | | | | | 1 | 122 | 0.44 | 0.44 | | | | |
| KWL | SVOC | (TIC) CINNAMYL CINNAMATE | | | | | 2 | 122 | 0.085 | 0.12 | | | | |
| KWL | SVOC | (TIC) CINNAMYLCINNAMATE | 9 | 33 | 0.35 | 9.9 | | | | | | | | |
| KWL | SVOC | (TIC) COPAENE | 3 | 33 | 0.1 | 0.42 | 1 | 122 | 0.12 | 0.12 | | | | |
| KWL | SVOC | (TIC) COPROSTAN-3-ONE | | | | | 7 | 122 | 1.4 | 6.6 | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| KWL | SVOC | (TIC) CYCLOHEXANECARBOXYLIC ACID, 1-PHENYL-, M | | | | | 1 | 122 | 7.8 | 7.8 | | | | |
| KWL | SVOC | (TIC) CYCLOPROPANENONANOIC ACID, 2-[(2-BUTYLCY | | | | | 1 | 122 | 3.6 | 3.6 | | | | |
| KWL | SVOC | (TIC) CYCLOTETRACOSANE | | | | | 1 | 122 | 2.3 | 2.3 | | | | |
| KWL | SVOC | (TIC) D:A-FRIEDOOLEANAN-7-OL, ACETATE, (7.ALPH | | | | | 2 | 122 | 3.5 | 4.5 | | | | |
| KWL | SVOC | (TIC) D:C-FRIEDOOLEAN-8-EN-3-ONE | | | | | 2 | 122 | 18 | 19 | | | | |
| KWL | SVOC | (TIC) D:C-FRIEDOOLEANAN-3-ONE | | | | | 4 | 122 | 0.8 | 7.4 | | | | |
| KWL | SVOC | (TIC) DECANE, 3,8-DIMETHYL- | | | | | 1 | 122 | 7.7 | 7.7 | | | | |
| KWL | SVOC | (TIC) DECANE, 5-ETHYL-5-METHYL- | | | | | 1 | 122 | 1.2 | 1.2 | | | | |
| KWL | SVOC | (TIC) D-FRIEDOOLEAN-14-EN-3-ONE | | | | | 4 | 122 | 0.12 | 4.1 | | | | |
| KWL | SVOC | (TIC) D-FRIEDOOLEAN-14-ENE, 3-METHOXY-, (3.BET | | | | | 1 | 122 | 2.9 | 2.9 | | | | |
| KWL | SVOC | (TIC) DOCOSANE | | | | | 5 | 122 | 0.99 | 8.7 | | | | |
| KWL | SVOC | (TIC) DOCOSANE, 11-BUTYL- | | | | | 2 | 122 | 1.3 | 4.6 | | | | |
| KWL | SVOC | (TIC) DOCOSANE, 9-BUTYL- | | | | | 2 | 122 | 2.7 | 6.6 | | | | |
| KWL | SVOC | (TIC) DODECANE | | | | | 2 | 122 | 0.22 | 0.52 | | | | |
| KWL | SVOC | (TIC) DODECANE, 2,6,10-TRIMETHYL- | | | | | 2 | 122 | 0.25 | 2.3 | | | | |
| KWL | SVOC | (TIC) DODECANE, 2,6,11-TRIMETHYL- | | | | | 2 | 122 | 0.83 | 5.1 | | | | |
| KWL | SVOC | (TIC) DOTRIACONTANE | | | | | 3 | 122 | 0.11 | 2.6 | | | | |
| KWL | SVOC | (TIC) EICOSANE | | | | | 30 | 122 | 0.13 | 15 | | | | |
| KWL | SVOC | (TIC) EICOSANE, 10-METHYL- | | | | | 1 | 122 | 11 | 11 | | | | |
| KWL | SVOC | (TIC) EICOSANE, 2-METHYL- | | | | | 1 | 122 | 1.4 | 1.4 | | | | |
| KWL | SVOC | (TIC) EPICHOLESTANOL | | | | | 3 | 122 | 2.3 | 3.8 | | | | |
| KWL | SVOC | (TIC) EPICOPROSTANOL | | | | | 1 | 122 | 1.9 | 1.9 | | | | |
| KWL | SVOC | (TIC) ERGOST-5-EN-3-OL, (3.BETA.)- | | | | | 25 | 122 | 0.44 | 10 | | | | |
| KWL | SVOC | (TIC) ERGOST-5-EN-3-OL,(3BETA)- | | | | | 1 | 122 | 0.27 | 0.27 | | | | |
| KWL | SVOC | (TIC) ERGOST-7-EN-3-OL, (3.BETA.)- | | | | | 4 | 122 | 6.3 | 10 | | | | |
| KWL | SVOC | (TIC) ERGOSTANOL | | | | | 17 | 122 | 0.57 | 39 | | | | |
| KWL | SVOC | (TIC) ETHANOL, 2-(TETRADECYLOXY)- | | | | | 1 | 122 | 2.5 | 2.5 | | | | |
| KWL | SVOC | (TIC) FRIEDELAN-3-ONE | | | | | 2 | 122 | 3 | 3 | | | | |
| KWL | SVOC | (TIC) GAMMA-SITOSTEROL | 14 | 33 | 0.34 | 4.2 | 22 | 122 | 0.24 | 15 | | | | |
| KWL | SVOC | (TIC) HENEICOSANE | | | | | 5 | 122 | 0.49 | 15 | | | | |
| KWL | SVOC | (TIC) HENEICOSANE, 11-(1-ETHYLPROPYL)- | | | | | 1 | 122 | 4.9 | 4.9 | | | | |
| KWL | SVOC | (TIC) HENEICOSANE, 11-DECYL- | | | | | 1 | 122 | 0.74 | 0.74 | | | | |
| KWL | SVOC | (TIC) HEPTACOSANE | | | | | 3 | 122 | 0.53 | 2.7 | | | | |
| KWL | SVOC | (TIC) HEPTADECANE | | | | | 30 | 122 | 0.48 | 18 | | | | |
| KWL | SVOC | (TIC) HEPTADECANE, 2,6-DIMETHYL- | | | | | 1 | 122 | 4.1 | 4.1 | | | | |
| KWL | SVOC | (TIC) HEPTADECANE, 2-METHYL- | | | | | 1 | 122 | 1.6 | 1.6 | | | | |
| KWL | SVOC | (TIC) HEPTADECANE, 9-OCTYL- | | | | | 6 | 122 | 5 | 14 | | | | |
| KWL | SVOC | (TIC) HEXACOSANE | | | | | 2 | 122 | 0.11 | 2.8 | | | | |
| KWL | SVOC | (TIC) HEXACOSANE, 9-OCTYL- | | | | | 1 | 122 | 4.1 | 4.1 | | | | |
| KWL | SVOC | (TIC) HEXADECANE | | | | | 10 | 122 | 0.1 | 16 | | | | |
| KWL | SVOC | (TIC) HEXADECANE, 1-CHLORO- | | | | | 1 | 122 | 0.21 | 0.21 | | | | |
| KWL | SVOC | (TIC) HEXADECANE, 2,6,10,14-TETRAMETHYL- | | | | | 1 | 122 | 0.12 | 0.12 | | | | |
| KWL | SVOC | (TIC) HEXADECANE, 2-METHYL- | | | | | 2 | 122 | 0.082 | 1.6 | | | | |
| KWL | SVOC | (TIC) HEXADECANE, 7,9-DIMETHYL- | | | | | 1 | 122 | 3.8 | 3.8 | | | | |
| KWL | SVOC | (TIC) HEXADECANOIC ACID | | | | | 4 | 122 | 0.4 | 2 | | | | |
| KWL | SVOC | (TIC) HEXADECANOICACID,BUTYLESTER | 1 | 33 | 0.3 | 0.3 | | | | | | | | |
| KWL | SVOC | (TIC) HEXATRIACONTANE | | | | | 14 | 122 | 0.09 | 16 | | | | |
| KWL | SVOC | (TIC) HOP-22(29)-EN-3.BETA.-OL | | | | | 2 | 122 | 1.2 | 6 | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| KWL | SVOC | (TIC) LONGIFOLENALDEHYDE | | | | | 1 | 122 | 4.3 | 4.3 | | | | |
| KWL | SVOC | (TIC) LUP-20(29)-EN-3-ONE | | | | | 2 | 122 | 1.9 | 3 | | | | |
| KWL | SVOC | (TIC) LUPEOL | | | | | 6 | 122 | 1 | 11 | | | | |
| KWL | SVOC | (TIC) NAPHTHALENE, 1,4-DIMETHYL- | | | | | 1 | 122 | 0.45 | 0.45 | | | | |
| KWL | SVOC | (TIC) NAPHTHALENE, 2,6-DIMETHYL- | | | | | 1 | 122 | 1.2 | 1.2 | | | | |
| KWL | SVOC | (TIC) NAPHTHALENE,1,2,3,5,6,8A-HEXAHYDRO-4,7- | 3 | 33 | 0.19 | 0.35 | | | | | | | | |
| KWL | SVOC | (TIC) N-HEXADECANOICACID | 9 | 33 | 0.092 | 1.3 | | | | | | | | |
| KWL | SVOC | (TIC) NONACOSANE | | | | | 2 | 122 | 0.88 | 11 | | | | |
| KWL | SVOC | (TIC) NONADECANE | | | | | 26 | 122 | 0.11 | 30 | | | | |
| KWL | SVOC | (TIC) NONADECANE, 9-METHYL- | | | | | 1 | 122 | 10 | 10 | | | | |
| KWL | SVOC | (TIC) NONYLPHENOLISOMER | | | | | 3 | 122 | 0.52 | 1 | | | | |
| KWL | SVOC | (TIC) OCTACOSANE | | | | | 3 | 122 | 0.6 | 3.7 | | | | |
| KWL | SVOC | (TIC) OCTADECANAL | | | | | 2 | 122 | 1.9 | 4.3 | | | | |
| KWL | SVOC | (TIC) OCTADECANE | | | | | 12 | 122 | 0.09 | 13 | | | | |
| KWL | SVOC | (TIC) OCTADECANE, 1-CHLORO- | | | | | 3 | 122 | 1.5 | 5.9 | | | | |
| KWL | SVOC | (TIC) OCTADECANOICACID,BUTYLESTER | 2 | 33 | 0.17 | 0.23 | | | | | | | | |
| KWL | SVOC | (TIC) OCTANE, 2,3,7-TRIMETHYL- | | | | | 1 | 122 | 3.3 | 3.3 | | | | |
| KWL | SVOC | (TIC) OLEAN-12-ENE | | | | | 2 | 122 | 0.96 | 4.7 | | | | |
| KWL | SVOC | (TIC) OLEAN-13(18)-ENE | | | | | 1 | 122 | 4.6 | 4.6 | | | | |
| KWL | SVOC | (TIC) OLEAN-18-ENE | | | | | 8 | 122 | 5.9 | 11 | | | | |
| KWL | SVOC | (TIC) OLEIC ACID | | | | | 1 | 122 | 3.4 | 3.4 | | | | |
| KWL | SVOC | (TIC) O-TERPHENYL | | | | | 1 | 122 | 2.2 | 2.2 | | | | |
| KWL | SVOC | (TIC) PENTADECANE | | | | | 4 | 122 | 2 | 7.1 | | | | |
| KWL | SVOC | (TIC) PENTADECANE, 2,6,10,14-TETRAMETHYL- | | | | | 1 | 122 | 0.086 | 0.086 | | | | |
| KWL | SVOC | (TIC) PENTADECANE, 8-HEXYL- | | | | | 1 | 122 | 14 | 14 | | | | |
| KWL | SVOC | (TIC) PENTATRIACONTANE | | | | | 4 | 122 | 0.71 | 8.7 | | | | |
| KWL | SVOC | (TIC) PERYLENE | | | | | 4 | 122 | 1.7 | 5.4 | | | | |
| KWL | SVOC | (TIC) PHENANTHRENE, 1-METHYL- | | | | | 1 | 122 | 0.16 | 0.16 | | | | |
| KWL | SVOC | (TIC) PHENANTHRENE, 2,4,5,7-TETRAMETHYL- | | | | | 1 | 122 | 48 | 48 | | | | |
| KWL | SVOC | (TIC) PHENANTHRENE, 2,5-DIMETHYL- | | | | | 1 | 122 | 0.96 | 0.96 | | | | |
| KWL | SVOC | (TIC) PHENANTHRENE, 2-METHYL- | | | | | 1 | 122 | 1.3 | 1.3 | | | | |
| KWL | SVOC | (TIC) PHENANTHRENE, 3,4,5,6-TETRAMETHYL- | | | | | 2 | 122 | 0.43 | 1.2 | | | | |
| KWL | SVOC | (TIC) PHENANTHRENE, 3,6-DIMETHYL- | | | | | 1 | 122 | 0.89 | 0.89 | | | | |
| KWL | SVOC | (TIC) PHENANTHRENE, 4-METHYL- | | | | | 1 | 122 | 1.6 | 1.6 | | | | |
| KWL | SVOC | (TIC) PHENANTHRENE,1-METHYL-7-(1-METHYLETHYL) | | | | | 4 | 122 | 0.33 | 2.7 | | | | |
| KWL | SVOC | (TIC) PHENOL, 4-(1,1,3,3-TETRAMETHYLBUTYL)- | | | | | 2 | 122 | 3 | 4.9 | | | | |
| KWL | SVOC | (TIC) PHENOL, 4-(1,1-DIMETHYLPROPYL)- | | | | | 1 | 122 | 0.33 | 0.33 | | | | |
| KWL | SVOC | (TIC) PHENOL, 4-(2,2,3,3-TETRAMETHYLBUTYL)- | | | | | 1 | 122 | 2.7 | 2.7 | | | | |
| KWL | SVOC | (TIC) PHENOL, 4-(2,2,4-TRIMETHYLPENTYL)- | | | | | 2 | 122 | 2.7 | 4 | | | | |
| KWL | SVOC | (TIC) PHENOL, NONYL- | | | | | 12 | 122 | 0.39 | 33 | | | | |
| KWL | SVOC | (TIC) PREGNAN-20-ONE, 3-(ACETYLOXY)-, (3.ALPHA | | | | | 1 | 122 | 0.6 | 0.6 | | | | |
| KWL | SVOC | (TIC) PYRENE, 1-METHYL- | | | | | 1 | 122 | 0.92 | 0.92 | | | | |
| KWL | SVOC | (TIC) PYRENE, 2-METHYL- | | | | | 1 | 122 | 0.16 | 0.16 | | | | |
| KWL | SVOC | (TIC) SESQUIROSEFURAN | | | | | 2 | 122 | 9.6 | 27 | | | | |
| KWL | SVOC | (TIC) STIGMAST-4-EN-3-ONE | 2 | 33 | 0.12 | 0.41 | 10 | 122 | 0.5 | 16 | | | | |
| KWL | SVOC | (TIC) STIGMASTEROL | 5 | 33 | 0.22 | 0.64 | 40 | 122 | 0.73 | 15 | | | | |
| KWL | SVOC | (TIC) SULFUR, MOL. (S8) | | | | | 16 | 122 | 0.11 | 26 | | | | |
| KWL | SVOC | (TIC) TARAXEROL | | | | | 20 | 122 | 1.2 | 17 | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| KWL | SVOC | (TIC) TESTOSTERONE | | | | | 5 | 122 | 0.46 | 6.7 | | | | |
| KWL | SVOC | (TIC) TETRACOSANE | | | | | 8 | 122 | 0.54 | 14 | | | | |
| KWL | SVOC | (TIC) TETRACOSANE, 11-DECYL- | | | | | 1 | 122 | 0.34 | 0.34 | | | | |
| KWL | SVOC | (TIC) TETRADECANAL | | | | | 1 | 122 | 1.2 | 1.2 | | | | |
| KWL | SVOC | (TIC) TETRADECANE | | | | | 4 | 122 | 0.15 | 4.9 | | | | |
| KWL | SVOC | (TIC) TETRADECANE, 1-CHLORO- | | | | | 2 | 122 | 3.5 | 3.5 | | | | |
| KWL | SVOC | (TIC) TETRADECANE, 2-METHYL- | | | | | 1 | 122 | 5.3 | 5.3 | | | | |
| KWL | SVOC | (TIC) TETRADECANE, 3-METHYL- | | | | | 1 | 122 | 6.9 | 6.9 | | | | |
| KWL | SVOC | (TIC) TETRADECANE, 4-METHYL- | | | | | 1 | 122 | 3.7 | 3.7 | | | | |
| KWL | SVOC | (TIC) TETRADECANOIC ACID, HEXADECYL ESTER | | | | | 1 | 122 | 13 | 13 | | | | |
| KWL | SVOC | (TIC) TETRADECANOICACID | 1 | 33 | 0.25 | 0.25 | | | | | | | | |
| KWL | SVOC | (TIC) TETRATETRACONTANE | | | | | 6 | 122 | 0.29 | 8.1 | | | | |
| KWL | SVOC | (TIC) TETRATRIACONTANE | | | | | 1 | 122 | 0.93 | 0.93 | | | | |
| KWL | SVOC | (TIC) TRICOSANE | | | | | 9 | 122 | 0.2 | 14 | | | | |
| KWL | SVOC | (TIC) TRICYCLO[4.3.0.07,9]NONANE, 2,2,5,5,8,8- | | | | | 2 | 122 | 3.9 | 8.6 | | | | |
| KWL | SVOC | (TIC) TRIDECANE | | | | | 2 | 122 | 5.6 | 14 | | | | |
| KWL | SVOC | (TIC) TRIDECANE, 6-PROPYL- | | | | | 1 | 122 | 11 | 11 | | | | |
| KWL | SVOC | (TIC) TRITETRACONTANE | | | | | 9 | 122 | 1.2 | 10 | | | | |
| KWL | SVOC | (TIC) UNKNOWN | 33 | 33 | 0.49 | 19 | 121 | 122 | 0.15 | 30 | 3 | 3 | 0.0023 | 0.016 |
| KWL | SVOC | (TIC) UNKNOWN ALCOHOL | | | | | 39 | 122 | 0.097 | 12 | | | | |
| KWL | SVOC | (TIC) UNKNOWN ALIPHATIC ALDEHYDE | | | | | 5 | 122 | 1.6 | 8.4 | | | | |
| KWL | SVOC | (TIC) UNKNOWN ALIPHATIC COMPOUND | | | | | 61 | 122 | 0.1 | 14 | | | | |
| KWL | SVOC | (TIC) UNKNOWN ALIPHATIC KETONE | | | | | 15 | 122 | 0.27 | 12 | | | | |
| KWL | SVOC | (TIC) UNKNOWN ALKANE | | | | | 37 | 122 | 0.12 | 20 | | | | |
| KWL | SVOC | (TIC) UNKNOWN ALKENE | | | | | 1 | 122 | 2.8 | 2.8 | | | | |
| KWL | SVOC | (TIC) UNKNOWN ALKYLBENZENE | | | | | 1 | 122 | 2 | 2 | | | | |
| KWL | SVOC | (TIC) UNKNOWN ALKYLPHENOL | | | | | 3 | 122 | 1.1 | 2.4 | | | | |
| KWL | SVOC | (TIC) UNKNOWN AMIDE | | | | | 1 | 122 | 0.39 | 0.39 | | | | |
| KWL | SVOC | (TIC) UNKNOWN AMINE | | | | | 3 | 122 | 2.5 | 3.1 | | | | |
| KWL | SVOC | (TIC) UNKNOWN AROMATIC COMPOUND | | | | | 1 | 122 | 1.8 | 1.8 | | | | |
| KWL | SVOC | (TIC) UNKNOWN BENZENE DERIVATIVE | | | | | 9 | 122 | 0.098 | 19 | | | | |
| KWL | SVOC | (TIC) UNKNOWN BENZOFLUORANTHENE | | | | | 4 | 122 | 0.32 | 3.6 | | | | |
| KWL | SVOC | (TIC) UNKNOWN CHOLESTANE DERIVATIVE | | | | | 3 | 122 | 2.1 | 20 | | | | |
| KWL | SVOC | (TIC) UNKNOWN CYCLOALKANE | 2 | 33 | 0.18 | 0.27 | 8 | 122 | 0.08 | 10 | | | | |
| KWL | SVOC | (TIC) UNKNOWN NAPHTHALENE DERIVATIVE | | | | | 1 | 122 | 1.3 | 1.3 | | | | |
| KWL | SVOC | (TIC) UNKNOWN OXIRANE | | | | | 2 | 122 | 0.64 | 1.1 | | | | |
| KWL | SVOC | (TIC) UNKNOWN PAH | 1 | 33 | 0.17 | 0.17 | 3 | 122 | 2.2 | 6.6 | | | | |
| KWL | SVOC | (TIC) UNKNOWN PHENOL DERIVATIVE | | | | | 1 | 122 | 3.4 | 3.4 | | | | |
| KWL | SVOC | (TIC) UNKNOWN PHTHALATE | | | | | 1 | 122 | 0.32 | 0.32 | | | | |
| KWL | SVOC | (TIC) UNKNOWN POLYCYCLIC HYDROCARBON | | | | | 29 | 122 | 0.21 | 8.8 | | | | |
| KWL | SVOC | (TIC) UNKNOWN POLYTERPENE DERIVATIVE | | | | | 75 | 122 | 0.19 | 33 | | | | |
| KWL | SVOC | (TIC) UNKNOWN STERANE DERIVATIVE | | | | | 23 | 122 | 0.23 | 29 | | | | |
| KWL | SVOC | (TIC) UNKNOWN STRAIGHT CHAIN ALKANE | 2 | 33 | 0.19 | 0.89 | | | | | | | | |
| KWL | SVOC | (TIC) UNKNOWN SUBSTITUTED BENZENE | | | | | 1 | 122 | 3.2 | 3.2 | | | | |
| KWL | SVOC | (TIC) UNKNOWNALDEHYDE | | | | | 1 | 122 | 8.2 | 8.2 | | | | |
| KWL | SVOC | (TIC) UNKNOWNALDOLCONDENSATE | 30 | 33 | 1.7 | 14 | 32 | 122 | 2.6 | 17 | | | | |
| KWL | SVOC | (TIC) UNKNOWNALKANE | 30 | 33 | 0.14 | 6.9 | 33 | 122 | 0.13 | 10 | | | | |
| KWL | SVOC | (TIC) UNKNOWNALKENE | 4 | 33 | 0.22 | 1.5 | 13 | 122 | 0.22 | 2.2 | | | | |

**Table 1A Waterbodies TIC Summary (by Exposure Area)**

| Exposure Area | Group | Analyte | Soil | | | | Sediment | | | | Surface Water | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/kg) | Max. (mg/kg) | Count of TIC Detects | Count of TIC Samples | Min. (mg/L) | Max. (mg/L) |
| KWL | SVOC | (TIC) UNKNOWNAMIDE | 1 | 33 | 0.099 | 0.099 | | | | | | | | |
| KWL | SVOC | (TIC) UNKNOWNPHTHALATE | 2 | 33 | 0.11 | 0.39 | 17 | 122 | 0.091 | 1 | | | | |
| KWL | SVOC | (TIC) UNKNOWNSILOXANE | 4 | 33 | 0.13 | 0.27 | 9 | 122 | 0.17 | 1.4 | | | | |
| KWL | SVOC | (TIC) UNKNOWNSTEROL | 13 | 33 | 0.15 | 1.5 | 9 | 122 | 0.11 | 3.1 | | | | |
| KWL | SVOC | (TIC) URS-12-ENE | | | | | 5 | 122 | 7.3 | 14 | | | | |
| KWL | SVOC | (TIC) VITAMIN E | | | | | 21 | 122 | 0.7 | 7.3 | | | | |
| KWL | SVOC | (TIC) VITAMINE | 8 | 33 | 0.1 | 2.1 | 18 | 122 | 0.14 | 3.6 | | | | |
| KWL | VOC | (TIC) UNKNOWN | | | | | 4 | 5 | 0.007 | 0.057 | | | | |
| KWL | VOC | (TIC) UNKNOWN ALKANE | | | | | 2 | 5 | 0.005 | 0.009 | | | | |
| KWL | VOC | (TIC) UNKNOWN NAPHTHALENE DERIVATIVE | | | | | 1 | 5 | 0.006 | 0.006 | | | | |

**Table 2 Soil TIC Screening**

| Exposure Area | Analyte | Count of TIC Detects | Count of TIC Samples | Detection Frequency | Minimum | Maximum | Units | Screening Criteria | Criteria Basis | Exceedances | COPC Flag | Rationale for Selection or Deletion |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BWL | No TICs with Criteria | | | | | | | | | | | |
| HC | (TIC) BENZOIC ACID | 19 | 300 | 6% | 0.097 | 13 | MG/KG | 25000 | RSL | 0 | N | BSL |
| HC | (TIC) ACETOPHENONE | 2 | 300 | 1% | 0.1 | 0.38 | MG/KG | 2 | NJ RDCSRS | 0 | N | BSL |
| HC | (TIC) BENZALDEHYDE | 2 | 300 | 1% | 0.42 | 3.3 | MG/KG | 170 | RSL | 0 | N | BSL |
| KWL | (TIC) BENZOIC ACID | 8 | 33 | 24% | 0.089 | 1.9 | MG/KG | 25000 | RSL | 0 | N | BSL |

Notes:

Only the analytes with screening levels are presented.

The maximum concentration of each TIC reported in each sample analysis was used.

The maximum detected concentration was used for the screening.

All compounds were screened against the lower of the US EPA (2017a) Regional Screening Level (RSL) for residential soil (THQ = 0.1; Target Cancer Risk = 10-6) and New Jersey Residential Direct Contact Soil Remediation Standards (NJ RDCSRS) (NJDEP, 2017).

Rationale codes:

Deletion reason: BSL - Below screening level.

**Table 3 Sediment TIC Screening 0-0.5 ft**

| Exposure Area | Analyte | Count of TIC Detects | Count of TIC Samples | Detection Frequency | Minimum | Maximum | Units | Screening Criteria | Criteria Basis | Exceedances | COPC Flag | Rationale for Selection or Deletion |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SL | (TIC) BENZO[J]FLUORANTHENE | 3 | 35 | 9% | 1.5 | 12 | MG/KG | 0.42 | EPA RSL | 3 | Y | ASL |
| BWL | (TIC) 1,2,4-TRIMETHYLBENZENE | 2 | 59 | 3% | 0.025 | 0.4 | MG/KG | 30 | EPA RSL | 0 | N | BSL |
| BWL | (TIC) BENZENE, PROPYL- | 2 | 57 | 4% | 0.47 | 0.9 | MG/KG | 380 | EPA RSL | 0 | N | BSL |
| BWL | (TIC) BENZENE, TERT-BUTYL- | 1 | 47 | 2% | 0.22 | 0.22 | MG/KG | 780 | EPA RSL | 0 | N | BSL |
| BWL | (TIC) BENZO(K)FLUORANTHENE | 1 | 57 | 2% | 2.8 | 2.8 | MG/KG | 6 | NJ RDCSRS | 0 | N | BSL |
| HC | (TIC) 1,2,4-TRIMETHYLBENZENE | 2 | 136 | 1% | 0.81 | 1.2 | MG/KG | 30 | EPA RSL | 0 | N | BSL |
| HC | (TIC) ACETOPHENONE | 1 | 136 | 1% | 0.26 | 0.26 | MG/KG | 2 | NJ RDCSRS | 0 | N | BSL |
| HC | (TIC) BENZENE, 1,2,3-TRIMETHYL- | 2 | 136 | 1% | 0.73 | 6.1 | MG/KG | 34 | EPA RSL | 0 | N | BSL |
| HC | (TIC) BENZO(K)FLUORANTHENE | 1 | 136 | 1% | 2 | 2 | MG/KG | 6 | NJ RDCSRS | 0 | N | BSL |
| HC | (TIC) BENZO[J]FLUORANTHENE | 1 | 136 | 1% | 1 | 1 | MG/KG | 0.42 | EPA RSL | 1 | N | LDF |
| HC | (TIC) BENZO[K]FLUORANTHENE | 1 | 136 | 1% | 1.5 | 1.5 | MG/KG | 6 | NJ RDCSRS | 0 | N | BSL |
| HC | (TIC) BENZOIC ACID | 1 | 136 | 1% | 0.35 | 0.35 | MG/KG | 25000 | EPA RSL | 0 | N | BSL |
| HC | (TIC) BIS(2-ETHYLHEXYL) PHTHALATE | 6 | 136 | 4% | 0.15 | 14 | MG/KG | 35 | NJ RDCSRS | 0 | N | BSL |
| HC | (TIC) DIBENZOFURAN | 3 | 136 | 2% | 0.18 | 0.39 | MG/KG | 7.3 | EPA RSL | 0 | N | BSL |
| HC | (TIC) INDENO(1,2,3-CD)PYRENE | 1 | 136 | 1% | 1.2 | 1.2 | MG/KG | 0.6 | NJ RDCSRS | 1 | N | LDF |
| HC | (TIC) NAPHTHALENE, 1-METHYL- | 2 | 136 | 1% | 0.17 | 0.62 | MG/KG | 18 | EPA RSL | 0 | N | BSL |
| KWL | (TIC) BENZALDEHYDE | 2 | 122 | 2% | 0.09 | 0.15 | MG/KG | 170 | EPA RSL | 0 | N | BSL |
| KWL | (TIC) BIS(2-ETHYLHEXYL) PHTHALATE | 16 | 122 | 13% | 0.13 | 6.7 | MG/KG | 35 | NJ RDCSRS | 0 | N | BSL |
| KWL | (TIC) CARBAZOLE | 1 | 122 | 1% | 2.4 | 2.4 | MG/KG | 24 | NJ RDCSRS | 0 | N | BSL |

Notes:

Only the analytes with screening levels are presented.

The maximum concentration of each TIC reported in each sample analysis was used.

The maximum detected concentration was used for the screening.

All compounds were screened against the lower of the US EPA (2017e) Regional Screening Level (RSL) for residential soil (THQ = 0.1; Target Cancer Risk = 10-6) and New Jersey Residential Direct Contact Soil Remediation Standards (NJ RDCSRS) (NJDEP, 2017).

Rationale codes:

Selection reason: ASL - Above screening level.

Deletion reason: BSL - Below screening level.

LDF - Low detection frequency (<5%).

**Table 4 Surface Water TIC Screening**

| Exposure Area | Analyte |
|---|---|
| SL | No TICs with Criteria |
| BWL | No TICs with Criteria |
| HC | No TICs with Criteria |
| KWL | No TICs with Criteria |

# Appendix E

---

## ProUCL Output

# ProUCL Output for Sediment Data

| Analyte | Exp Area | Matrix | Valid Obs | Rec. UCL | Method | Max | EPC=Max |
|---|---|---|---|---|---|---|---|
| ALUMINUM | BWL | Sediment | 59 | 14676 | 95% Student's-t UCL | 28000 | FALSE |
| ANTIMONY | BWL | Sediment | 59 | 7.3 | 95% KM (t) UCL | 38 | FALSE |
| ARSENIC | BWL | Sediment | 62 | 284 | 95% Student's-t UCL | 1070 | FALSE |
| CADMIUM | BWL | Sediment | 62 | 13 | 95% KM (t) UCL | 39 | FALSE |
| CHROMIUM | BWL | Sediment | 62 | 155 | 95% Chebyshev (Mean, Sd) UCL | 395 | FALSE |
| COBALT | BWL | Sediment | 62 | 17 | 95% KM (Chebyshev) UCL | 34 | FALSE |
| COPPER | BWL | Sediment | 62 | 176 | 95% Approximate Gamma UCL | 566 | FALSE |
| CYANIDE | BWL | Sediment | 51 | 15 | 95% KM (BCA) UCL | 198 | FALSE |
| IRON | BWL | Sediment | 62 | 42168 | 95% Approximate Gamma UCL | 163000 | FALSE |
| LEAD | BWL | Sediment | 60 | 1742 | 95% Student's-t UCL | 5840 | FALSE |
| MANGANESE | BWL | Sediment | 62 | 110 | 95% Approximate Gamma UCL | 569 | FALSE |
| VANADIUM | BWL | Sediment | 62 | 56 | 95% KM (Chebyshev) UCL | 79 | FALSE |
| ZINC | BWL | Sediment | 62 | 1119 | 95% Student's-t UCL | 2540 | FALSE |
| AROCLOR-1254 | BWL | Sediment | 54 | 0.080 | 95% KM (t) UCL | 0.38 | FALSE |
| BENZO(A)ANTHRACENE | BWL | Sediment | 58 | 1.3 | 95% KM (Chebyshev) UCL | 6.5 | FALSE |
| BENZO(A)PYRENE | BWL | Sediment | 58 | 1.4 | 95% KM (Chebyshev) UCL | 6.2 | FALSE |
| BENZO(B)FLUORANTHENE | BWL | Sediment | 58 | 2.0 | 95% KM (Chebyshev) UCL | 9.9 | FALSE |
| BENZO(K)FLUORANTHENE | BWL | Sediment | 58 | 2.0 | 95% KM (Chebyshev) UCL | 9.7 | FALSE |
| DIBENZO(A,H)ANTHRACENE | BWL | Sediment | 54 | 0.29 | 95% KM (t) UCL | 1.0 | FALSE |
| INDENO(1,2,3-CD)PYRENE | BWL | Sediment | 56 | 0.75 | 95% KM (Chebyshev) UCL | 3.8 | FALSE |
| NAPHTHALENE | BWL | Sediment | 54 | 2.8 | 95% KM (Chebyshev) UCL | 25 | FALSE |
| TRICHLOROETHYLENE | BWL | Sediment | 54 | 0.067 | 95% KM (t) UCL | 0.50 | FALSE |

SD_BWL_7.10.17.xlsx

## UCL Statistics for Data Sets with Non-Detects

| User Selected Options | |
|---|---|
| Date/Time of Computation | 7/10/2017 11:07:58 AM |
| From File | SD_BWL_7.10.17.xlsx |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Number of Bootstrap Operations | 2000 |

## ALUMINUM

### General Statistics

| | | | |
|---|---|---|---|
| Total Number of Observations | 59 | Number of Distinct Observations | 52 |
| | | Number of Missing Observations | 4 |
| Minimum | 266 | Mean | 13022 |
| Maximum | 28000 | Median | 14200 |
| SD | 7597 | Std. Error of Mean | 989 |
| Coefficient of Variation | 0.583 | Skewness | -0.187 |

### Normal GOF Test

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.935 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 0.00502 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.0964 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.115 | Data appear Normal at 5% Significance Level | |

Data appear Approximate Normal at 5% Significance Level

### Assuming Normal Distribution

| 95% Normal UCL | | 95% UCLs (Adjusted for Skewness) | |
|---|---|---|---|
| 95% Student's-t UCL | 14676 | 95% Adjusted-CLT UCL (Chen-1995) | 14623 |
| | | 95% Modified-t UCL (Johnson-1978) | 14672 |

### Gamma GOF Test

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.765 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.768 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.195 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.118 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

### Gamma Statistics

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.557 | k star (bias corrected MLE) | 1.489 |
| Theta hat (MLE) | 8366 | Theta star (bias corrected MLE) | 8747 |
| nu hat (MLE) | 183.7 | nu star (bias corrected) | 175.7 |
| MLE Mean (bias corrected) | 13022 | MLE Sd (bias corrected) | 10673 |
| | | Approximate Chi Square Value (0.05) | 146 |
| Adjusted Level of Significance | 0.0459 | Adjusted Chi Square Value | 145.3 |

### Assuming Gamma Distribution

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 15667 | 95% Adjusted Gamma UCL (use when n<50) | 15740 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.795 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 8.65E-11 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.226 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.115 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 5.583 | Mean of logged Data | 9.12 |
| Maximum of Logged Data | 10.24 | SD of logged Data | 1.092 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 23735 | 90% Chebyshev (MVUE) UCL | 24780 |
| 95% Chebyshev (MVUE) UCL | 28605 | 97.5% Chebyshev (MVUE) UCL | 33915 |
| 99% Chebyshev (MVUE) UCL | 44346 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 14649 | 95% Jackknife UCL | 14676 |
| 95% Standard Bootstrap UCL | 14598 | 95% Bootstrap-t UCL | 14493 |
| 95% Hall's Bootstrap UCL | 14588 | 95% Percentile Bootstrap UCL | 14662 |
| 95% BCA Bootstrap UCL | 14643 | | |
| 90% Chebyshev(Mean, Sd) UCL | 15989 | 95% Chebyshev(Mean, Sd) UCL | 17333 |
| 97.5% Chebyshev(Mean, Sd) UCL | 19199 | 99% Chebyshev(Mean, Sd) UCL | 22863 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Student's-t UCL | 14676 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

**ANTIMONY**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 59 | Number of Distinct Observations | 50 |
| | | Number of Missing Observations | 4 |
| Number of Detects | 26 | Number of Non-Detects | 33 |
| Number of Distinct Detects | 24 | Number of Distinct Non-Detects | 30 |
| Minimum Detect | 1.9 | Minimum Non-Detect | 0.26 |
| Maximum Detect | 38.1 | Maximum Non-Detect | 11.3 |
| Variance Detects | 54.58 | Percent Non-Detects | 55.93% |

| | | | |
|---|---|---|---|
| Mean Detects | 10.53 | SD Detects | 7.388 |
| Median Detects | 8.55 | CV Detects | 0.702 |
| Skewness Detects | 2.462 | Kurtosis Detects | 7.488 |
| Mean of Logged Detects | 2.178 | SD of Logged Detects | 0.595 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.749 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.92 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.238 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.174 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 5.695 | Standard Error of Mean | 0.94 |
| SD | 6.671 | 95% KM (BCA) UCL | 7.612 |
| 95% KM (t) UCL | 7.266 | 95% KM (Percentile Bootstrap) UCL | 7.388 |
| 95% KM (z) UCL | 7.241 | 95% KM Bootstrap t UCL | 7.557 |
| 90% KM Chebyshev UCL | 8.515 | 95% KM Chebyshev UCL | 9.792 |
| 97.5% KM Chebyshev UCL | 11.57 | 99% KM Chebyshev UCL | 15.05 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.768 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.751 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.164 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.172 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data follow Appr. Gamma Distribution at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 2.997 | k star (bias corrected MLE) | 2.677 |
| Theta hat (MLE) | 3.512 | Theta star (bias corrected MLE) | 3.933 |
| nu hat (MLE) | 155.9 | nu star (bias corrected) | 139.2 |
| MLE Mean (bias corrected) | 10.53 | MLE Sd (bias corrected) | 6.434 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.729 | nu hat (KM) | 85.98 |
| Approximate Chi Square Value (85.98, α) | 65.6 | Adjusted Chi Square Value (85.98, β) | 65.16 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 7.463 | 95% Gamma Adjusted KM-UCL (use when n<50) | 7.514 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 4.87 |
| Maximum | 38.1 | Median | 1.221 |
| SD | 7.045 | CV | 1.447 |
| k hat (MLE) | 0.279 | k star (bias corrected MLE) | 0.276 |
| Theta hat (MLE) | 17.43 | Theta star (bias corrected MLE) | 17.61 |
| nu hat (MLE) | 32.97 | nu star (bias corrected) | 32.63 |

| | | | |
|---|---|---|---|
| MLE Mean (bias corrected) | 4.87 | MLE Sd (bias corrected) | 9.261 |
| | | Adjusted Level of Significance (β) | 0.0459 |
| Approximate Chi Square Value (32.63, α) | 20.57 | Adjusted Chi Square Value (32.63, β) | 20.33 |
| 95% Gamma Approximate UCL (use when n>=50) | 7.724 | 95% Gamma Adjusted UCL (use when n<50) | 7.815 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.959 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.92 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.132 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.174 | Detected Data appear Lognormal at 5% Significance Level | |

**Detected Data appear Lognormal at 5% Significance Level**

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 6.133 | Mean in Log Scale | 1.491 |
| SD in Original Scale | 6.269 | SD in Log Scale | 0.753 |
| 95% t UCL (assumes normality of ROS data) | 7.498 | 95% Percentile Bootstrap UCL | 7.605 |
| 95% BCA Bootstrap UCL | 7.739 | 95% Bootstrap t UCL | 8.078 |
| 95% H-UCL (Log ROS) | 7.247 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | 0.859 | 95% H-UCL (KM -Log) | 15.97 |
| KM SD (logged) | 1.574 | 95% Critical H Value (KM-Log) | 3.256 |
| KM Standard Error of Mean (logged) | 0.338 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 6.32 | Mean in Log Scale | 1.472 |
| SD in Original Scale | 6.238 | SD in Log Scale | 0.93 |
| 95% t UCL (Assumes normality) | 7.678 | 95% H-Stat UCL | 8.844 |

**DL/2 is not a recommended method, provided for comparisons and historical reasons**

**Nonparametric Distribution Free UCL Statistics**

**Detected Data appear Approximate Gamma Distributed at 5% Significance Level**

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 7.266 | 95% GROS Approximate Gamma UCL | 7.724 |
| 95% Approximate Gamma KM-UCL | 7.463 | | |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**ARSENIC**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 62 | Number of Distinct Observations | 61 |
| | | Number of Missing Observations | 1 |

| | | | |
|---|---|---|---|
| Minimum | 2.2 | Mean | 242 |
| Maximum | 1070 | Median | 233.5 |
| SD | 196.4 | Std. Error of Mean | 24.94 |
| Coefficient of Variation | 0.812 | Skewness | 1.34 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.903 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 4.00E-05 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.111 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.113 | Data appear Normal at 5% Significance Level | |

Data appear Approximate Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 283.7 | 95% Adjusted-CLT UCL (Chen-1995) | 287.6 |
| | | 95% Modified-t UCL (Johnson-1978) | 284.4 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.417 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.779 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.133 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.116 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1 | k star (bias corrected MLE) | 0.962 |
| Theta hat (MLE) | 242 | Theta star (bias corrected MLE) | 251.5 |
| nu hat (MLE) | 124 | nu star (bias corrected) | 119.3 |
| MLE Mean (bias corrected) | 242 | MLE Sd (bias corrected) | 246.7 |
| | | Approximate Chi Square Value (0.05) | 95.11 |
| Adjusted Level of Significance | 0.0461 | Adjusted Chi Square Value | 94.59 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 303.7 | 95% Adjusted Gamma UCL (use when n<50) | 305.3 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.84 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 6.83E-09 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.182 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.113 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 0.788 | Mean of logged Data | 4.912 |
| Maximum of Logged Data | 6.975 | SD of logged Data | 1.431 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 588.7 | 90% Chebyshev (MVUE) UCL | 631.2 |

| | | | |
|---|---|---|---|
| 95% Chebyshev (MVUE) UCL | 751.2 | 97.5% Chebyshev (MVUE) UCL | 917.7 |
| 99% Chebyshev (MVUE) UCL | 1245 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 283 | 95% Jackknife UCL | 283.7 |
| 95% Standard Bootstrap UCL | 283.2 | 95% Bootstrap-t UCL | 290.3 |
| 95% Hall's Bootstrap UCL | 290.8 | 95% Percentile Bootstrap UCL | 284.2 |
| 95% BCA Bootstrap UCL | 287.2 | | |
| 90% Chebyshev(Mean, Sd) UCL | 316.8 | 95% Chebyshev(Mean, Sd) UCL | 350.7 |
| 97.5% Chebyshev(Mean, Sd) UCL | 397.8 | 99% Chebyshev(Mean, Sd) UCL | 490.2 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Student's-t UCL | 283.7 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**CADMIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 62 | Number of Distinct Observations | 58 |
| | | Number of Missing Observations | 1 |
| Number of Detects | 59 | Number of Non-Detects | 3 |
| Number of Distinct Detects | 55 | Number of Distinct Non-Detects | 3 |
| Minimum Detect | 0.18 | Minimum Non-Detect | 0.06 |
| Maximum Detect | 38.7 | Maximum Non-Detect | 0.15 |
| Variance Detects | 79.8 | Percent Non-Detects | 4.84% |
| Mean Detects | 12 | SD Detects | 8.933 |
| Median Detects | 9.7 | CV Detects | 0.745 |
| Skewness Detects | 0.634 | Kurtosis Detects | -0.0626 |
| Mean of Logged Detects | 2.016 | SD of Logged Detects | 1.219 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.937 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0.00631 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.11 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.115 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Approximate Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 11.42 | Standard Error of Mean | 1.154 |
| SD | 9.012 | 95% KM (BCA) UCL | 13.23 |
| 95% KM (t) UCL | 13.35 | 95% KM (Percentile Bootstrap) UCL | 13.29 |
| 95% KM (z) UCL | 13.32 | 95% KM Bootstrap t UCL | 13.34 |

| | | | |
|---|---|---|---|
| 90% KM Chebyshev UCL | 14.88 | 95% KM Chebyshev UCL | 16.45 |
| 97.5% KM Chebyshev UCL | 18.63 | 99% KM Chebyshev UCL | 22.91 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.944 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.775 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.105 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.119 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data follow Appr. Gamma Distribution at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.207 | k star (bias corrected MLE) | 1.157 |
| Theta hat (MLE) | 9.942 | Theta star (bias corrected MLE) | 10.37 |
| nu hat (MLE) | 142.4 | nu star (bias corrected) | 136.5 |
| MLE Mean (bias corrected) | 12 | MLE Sd (bias corrected) | 11.16 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 1.606 | nu hat (KM) | 199.2 |
| Approximate Chi Square Value (199.15, α) | 167.5 | Adjusted Chi Square Value (199.15, β) | 166.8 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 13.58 | 95% Gamma Adjusted KM-UCL (use when n<50) | 13.64 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.18 | Mean | 11.5 |
| Maximum | 38.7 | Median | 9.3 |
| SD | 8.995 | CV | 0.782 |
| k hat (MLE) | 1.138 | k star (bias corrected MLE) | 1.094 |
| Theta hat (MLE) | 10.1 | Theta star (bias corrected MLE) | 10.51 |
| nu hat (MLE) | 141.1 | nu star (bias corrected) | 135.6 |
| MLE Mean (bias corrected) | 11.5 | MLE Sd (bias corrected) | 10.99 |
| | | Adjusted Level of Significance (β) | 0.0461 |
| Approximate Chi Square Value (135.63, α) | 109.7 | Adjusted Chi Square Value (135.63, β) | 109.2 |
| 95% Gamma Approximate UCL (use when n>=50) | 14.21 | 95% Gamma Adjusted UCL (use when n<50) | 14.28 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.16 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.115 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 11.44 | Mean in Log Scale | 1.888 |
| SD in Original Scale | 9.057 | SD in Log Scale | 1.32 |
| 95% t UCL (assumes normality of ROS data) | 13.36 | 95% Percentile Bootstrap UCL | 13.33 |
| 95% BCA Bootstrap UCL | 13.45 | 95% Bootstrap t UCL | 13.46 |
| 95% H-UCL (Log ROS) | 23.29 | | |

**DL/2 Statistics**

| DL/2 Normal | | DL/2 Log-Transformed | |
|---|---|---|---|
| Mean in Original Scale | 11.42 | Mean in Log Scale | 1.778 |
| SD in Original Scale | 9.086 | SD in Log Scale | 1.6 |
| 95% t UCL (Assumes normality) | 13.35 | 95% H-Stat UCL | 36.45 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 13.35 | 95% KM (Percentile Bootstrap) UCL | 13.29 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**CHROMIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 62 | Number of Distinct Observations | 60 |
| | | Number of Missing Observations | 1 |
| Minimum | 1.1 | Mean | 107.9 |
| Maximum | 395 | Median | 92.4 |
| SD | 85.61 | Std. Error of Mean | 10.87 |
| Coefficient of Variation | 0.793 | Skewness | 0.724 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.92 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 4.36E-04 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.129 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.113 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| 95% Normal UCL | | 95% UCLs (Adjusted for Skewness) | |
|---|---|---|---|
| 95% Student's-t UCL | 126.1 | 95% Adjusted-CLT UCL (Chen-1995) | 126.9 |
| | | 95% Modified-t UCL (Johnson-1978) | 126.3 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.278 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.779 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.141 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.116 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.032 | k star (bias corrected MLE) | 0.992 |
| Theta hat (MLE) | 104.6 | Theta star (bias corrected MLE) | 108.8 |
| nu hat (MLE) | 127.9 | nu star (bias corrected) | 123.1 |
| MLE Mean (bias corrected) | 107.9 | MLE Sd (bias corrected) | 108.4 |
| | | Approximate Chi Square Value (0.05) | 98.43 |
| Adjusted Level of Significance | 0.0461 | Adjusted Chi Square Value | 97.91 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 134.9 | 95% Adjusted Gamma UCL (use when n<50) | 135.7 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.877 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 1.05E-06 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.164 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.113 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 0.0953 | Mean of logged Data | 4.124 |
| Maximum of Logged Data | 5.979 | SD of logged Data | 1.344 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 227.4 | 90% Chebyshev (MVUE) UCL | 247.2 |
| 95% Chebyshev (MVUE) UCL | 291.9 | 97.5% Chebyshev (MVUE) UCL | 353.9 |
| 99% Chebyshev (MVUE) UCL | 475.7 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 125.8 | 95% Jackknife UCL | 126.1 |
| 95% Standard Bootstrap UCL | 125.1 | 95% Bootstrap-t UCL | 127.7 |
| 95% Hall's Bootstrap UCL | 127.9 | 95% Percentile Bootstrap UCL | 126.8 |
| 95% BCA Bootstrap UCL | 126.8 | | |
| 90% Chebyshev(Mean, Sd) UCL | 140.6 | 95% Chebyshev(Mean, Sd) UCL | 155.3 |
| 97.5% Chebyshev(Mean, Sd) UCL | 175.8 | 99% Chebyshev(Mean, Sd) UCL | 216.1 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 155.3 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**COBALT**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 62 | Number of Distinct Observations | 55 |
| | | Number of Missing Observations | 1 |
| Number of Detects | 59 | Number of Non-Detects | 3 |
| Number of Distinct Detects | 52 | Number of Distinct Non-Detects | 3 |
| Minimum Detect | 0.42 | Minimum Non-Detect | 0.33 |
| Maximum Detect | 34.3 | Maximum Non-Detect | 1.2 |
| Variance Detects | 75.17 | Percent Non-Detects | 4.84% |
| Mean Detects | 12.39 | SD Detects | 8.67 |
| Median Detects | 10.6 | CV Detects | 0.7 |
| Skewness Detects | 0.664 | Kurtosis Detects | -0.453 |
| Mean of Logged Detects | 2.166 | SD of Logged Detects | 1.005 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.928 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0.00188 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.117 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.115 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 11.81 | Standard Error of Mean | 1.123 |
| SD | 8.771 | 95% KM (BCA) UCL | 13.65 |
| 95% KM (t) UCL | 13.69 | 95% KM (Percentile Bootstrap) UCL | 13.65 |
| 95% KM (z) UCL | 13.66 | 95% KM Bootstrap t UCL | 13.83 |
| 90% KM Chebyshev UCL | 15.18 | 95% KM Chebyshev UCL | 16.71 |
| 97.5% KM Chebyshev UCL | 18.83 | 99% KM Chebyshev UCL | 22.99 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.413 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.768 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.0777 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.118 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.571 | k star (bias corrected MLE) | 1.502 |
| Theta hat (MLE) | 7.892 | Theta star (bias corrected MLE) | 8.252 |
| nu hat (MLE) | 185.3 | nu star (bias corrected) | 177.2 |
| MLE Mean (bias corrected) | 12.39 | MLE Sd (bias corrected) | 10.11 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 1.814 | nu hat (KM) | 225 |
| Approximate Chi Square Value (224.98, α) | 191.3 | Adjusted Chi Square Value (224.98, β) | 190.5 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 13.9 | 95% Gamma Adjusted KM-UCL (use when n<50) | 13.95 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.42 | Mean | 11.87 |
| Maximum | 34.3 | Median | 9.65 |
| SD | 8.777 | CV | 0.74 |
| k hat (MLE) | 1.409 | k star (bias corrected MLE) | 1.352 |
| Theta hat (MLE) | 8.422 | Theta star (bias corrected MLE) | 8.78 |
| nu hat (MLE) | 174.7 | nu star (bias corrected) | 167.6 |
| MLE Mean (bias corrected) | 11.87 | MLE Sd (bias corrected) | 10.21 |
| | | Adjusted Level of Significance (β) | 0.0461 |
| Approximate Chi Square Value (167.60, α) | 138.7 | Adjusted Chi Square Value (167.60, β) | 138 |
| 95% Gamma Approximate UCL (use when n>=50) | 14.34 | 95% Gamma Adjusted UCL (use when n<50) | 14.41 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.136 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.115 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 11.85 | Mean in Log Scale | 2.066 |
| SD in Original Scale | 8.799 | SD in Log Scale | 1.08 |
| 95% t UCL (assumes normality of ROS data) | 13.72 | 95% Percentile Bootstrap UCL | 13.63 |
| 95% BCA Bootstrap UCL | 13.81 | 95% Bootstrap t UCL | 13.75 |
| 95% H-UCL (Log ROS) | 19.39 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 11.81 | Mean in Log Scale | 2.012 |
| SD in Original Scale | 8.843 | SD in Log Scale | 1.206 |
| 95% t UCL (Assumes normality) | 13.69 | 95% H-Stat UCL | 21.95 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Gamma Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (Chebyshev) UCL | 16.71 | 95% GROS Approximate Gamma UCL | 14.34 |
| 95% Approximate Gamma KM-UCL | 13.9 | | |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 62 | Number of Distinct Observations | 60 |
| | | Number of Missing Observations | 1 |
| Minimum | 0.59 | Mean | 140.7 |
| Maximum | 566 | Median | 101.8 |
| SD | 119.9 | Std. Error of Mean | 15.22 |
| Coefficient of Variation | 0.852 | Skewness | 1.084 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.899 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 2.21E-05 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.156 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.113 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 166.1 | 95% Adjusted-CLT UCL (Chen-1995) | 168 |
| | | 95% Modified-t UCL (Johnson-1978) | 166.5 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.511 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.779 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.0738 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.116 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.028 | k star (bias corrected MLE) | 0.989 |
| Theta hat (MLE) | 136.8 | Theta star (bias corrected MLE) | 142.2 |
| nu hat (MLE) | 127.5 | nu star (bias corrected) | 122.7 |
| MLE Mean (bias corrected) | 140.7 | MLE Sd (bias corrected) | 141.5 |
| | | Approximate Chi Square Value (0.05) | 98.08 |
| Adjusted Level of Significance | 0.0461 | Adjusted Chi Square Value | 97.56 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50) | 175.9 | 95% Adjusted Gamma UCL (use when n<50) | 176.9 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.893 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 1.02E-05 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.146 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.113 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -0.528 | Mean of logged Data | 4.387 |
| Maximum of Logged Data | 6.339 | SD of logged Data | 1.347 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 297.5 | 90% Chebyshev (MVUE) UCL | 323.3 |
| 95% Chebyshev (MVUE) UCL | 381.9 | 97.5% Chebyshev (MVUE) UCL | 463.2 |
| 99% Chebyshev (MVUE) UCL | 622.9 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 165.7 | 95% Jackknife UCL | 166.1 |
| 95% Standard Bootstrap UCL | 165.7 | 95% Bootstrap-t UCL | 168.5 |
| 95% Hall's Bootstrap UCL | 169.1 | 95% Percentile Bootstrap UCL | 166.4 |
| 95% BCA Bootstrap UCL | 166.7 | | |
| 90% Chebyshev(Mean, Sd) UCL | 186.4 | 95% Chebyshev(Mean, Sd) UCL | 207 |
| 97.5% Chebyshev(Mean, Sd) UCL | 235.8 | 99% Chebyshev(Mean, Sd) UCL | 292.2 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Approximate Gamma UCL | 175.9 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**CYANIDE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 51 | Number of Distinct Observations | 47 |
| | | Number of Missing Observations | 12 |
| Number of Detects | 22 | Number of Non-Detects | 29 |
| Number of Distinct Detects | 22 | Number of Distinct Non-Detects | 26 |
| Minimum Detect | 0.96 | Minimum Non-Detect | 0.41 |
| Maximum Detect | 198 | Maximum Non-Detect | 4.6 |
| Variance Detects | 1667 | Percent Non-Detects | 56.86% |
| Mean Detects | 15.89 | SD Detects | 40.83 |
| Median Detects | 7.5 | CV Detects | 2.569 |
| Skewness Detects | 4.631 | Kurtosis Detects | 21.61 |
| Mean of Logged Detects | 1.943 | SD of Logged Detects | 1.04 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.296 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.911 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.474 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.189 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 7.186 | Standard Error of Mean | 3.91 |
| SD | 27.28 | 95% KM (BCA) UCL | 15.22 |
| 95% KM (t) UCL | 13.74 | 95% KM (Percentile Bootstrap) UCL | 14.8 |
| 95% KM (z) UCL | 13.62 | 95% KM Bootstrap t UCL | 39.97 |
| 90% KM Chebyshev UCL | 18.92 | 95% KM Chebyshev UCL | 24.23 |
| 97.5% KM Chebyshev UCL | 31.61 | 99% KM Chebyshev UCL | 46.09 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.925 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.785 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.342 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.193 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.73 | k star (bias corrected MLE) | 0.661 |
| Theta hat (MLE) | 21.78 | Theta star (bias corrected MLE) | 24.06 |
| nu hat (MLE) | 32.11 | nu star (bias corrected) | 29.07 |
| MLE Mean (bias corrected) | 15.89 | MLE Sd (bias corrected) | 19.55 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.0694 | nu hat (KM) | 7.079 |
| Approximate Chi Square Value (7.08, α) | 2.214 | Adjusted Chi Square Value (7.08, β) | 2.136 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 22.98 | 95% Gamma Adjusted KM-UCL (use when n<50) | 23.82 |

Gamma (KM) may not be used when k hat (KM) is < 0.1

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 6.862 |
| Maximum | 198 | Median | 0.01 |
| SD | 27.63 | CV | 4.026 |
| k hat (MLE) | 0.199 | k star (bias corrected MLE) | 0.2 |
| Theta hat (MLE) | 34.53 | Theta star (bias corrected MLE) | 34.29 |
| nu hat (MLE) | 20.27 | nu star (bias corrected) | 20.41 |
| MLE Mean (bias corrected) | 6.862 | MLE Sd (bias corrected) | 15.34 |
| | | Adjusted Level of Significance (β) | 0.0453 |
| Approximate Chi Square Value (20.41, α) | 11.16 | Adjusted Chi Square Value (20.41, β) | 10.96 |
| 95% Gamma Approximate UCL (use when n>=50) | 12.56 | 95% Gamma Adjusted UCL (use when n<50) | 12.78 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.843 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.911 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.208 | **Lilliefors GOF Test** | |

| | | | |
|---|---|---|---|
| 5% Lilliefors Critical Value | 0.189 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 7.212 | Mean in Log Scale | 0.546 |
| SD in Original Scale | 27.54 | SD in Log Scale | 1.421 |
| 95% t UCL (assumes normality of ROS data) | 13.68 | 95% Percentile Bootstrap UCL | 14.82 |
| 95% BCA Bootstrap UCL | 19.32 | 95% Bootstrap t UCL | 41.83 |
| 95% H-UCL (Log ROS) | 8.28 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 7.46 | Mean in Log Scale | 0.759 |
| SD in Original Scale | 27.49 | SD in Log Scale | 1.348 |
| 95% t UCL (Assumes normality) | 13.91 | 95% H-Stat UCL | 8.85 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (BCA) UCL | 15.22 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**IRON**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 62 | Number of Distinct Observations | 60 |
| | | Number of Missing Observations | 1 |
| Minimum | 577 | Mean | 34653 |
| Maximum | 163000 | Median | 31400 |
| SD | 29647 | Std. Error of Mean | 3765 |
| Coefficient of Variation | 0.856 | Skewness | 1.976 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.836 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 4.22E-09 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.168 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.113 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| **95% Normal UCL** | **95% UCLs (Adjusted for Skewness)** |
|---|---|

| | | | |
|---|---|---|---|
| 95% Student's-t UCL | 40941 | 95% Adjusted-CLT UCL (Chen-1995) | 41855 |
| | | 95% Modified-t UCL (Johnson-1978) | 41099 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.679 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.773 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.0973 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.116 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.318 | k star (bias corrected MLE) | 1.265 |
| Theta hat (MLE) | 26299 | Theta star (bias corrected MLE) | 27401 |
| nu hat (MLE) | 163.4 | nu star (bias corrected) | 156.8 |
| MLE Mean (bias corrected) | 34653 | MLE Sd (bias corrected) | 30814 |
| | | Approximate Chi Square Value (0.05) | 128.9 |
| Adjusted Level of Significance | 0.0461 | Adjusted Chi Square Value | 128.3 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50) | 42168 | 95% Adjusted Gamma UCL (use when n<50) | 42366 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.905 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 5.15E-05 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.154 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.113 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 6.358 | Mean of logged Data | 10.03 |
| Maximum of Logged Data | 12 | SD of logged Data | 1.11 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 58049 | 90% Chebyshev (MVUE) UCL | 62624 |
| 95% Chebyshev (MVUE) UCL | 72281 | 97.5% Chebyshev (MVUE) UCL | 85684 |
| 99% Chebyshev (MVUE) UCL | 112013 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 40846 | 95% Jackknife UCL | 40941 |
| 95% Standard Bootstrap UCL | 40814 | 95% Bootstrap-t UCL | 41989 |
| 95% Hall's Bootstrap UCL | 42651 | 95% Percentile Bootstrap UCL | 41127 |
| 95% BCA Bootstrap UCL | 43024 | | |
| 90% Chebyshev(Mean, Sd) UCL | 45948 | 95% Chebyshev(Mean, Sd) UCL | 51064 |
| 97.5% Chebyshev(Mean, Sd) UCL | 58166 | 99% Chebyshev(Mean, Sd) UCL | 72115 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Approximate Gamma UCL | 42168 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**LEAD**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 60 | Number of Distinct Observations | 60 |
| | | Number of Missing Observations | 3 |
| Minimum | 4.7 | Mean | 1485 |
| Maximum | 5840 | Median | 1315 |
| SD | 1188 | Std. Error of Mean | 153.4 |
| Coefficient of Variation | 0.8 | Skewness | 1.175 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.91 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 1.50E-04 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.106 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.114 | Data appear Normal at 5% Significance Level | |

Data appear Approximate Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 1742 | 95% Adjusted-CLT UCL (Chen-1995) | 1763 |
| | | 95% Modified-t UCL (Johnson-1978) | 1746 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.135 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.779 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.129 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.118 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.024 | k star (bias corrected MLE) | 0.984 |
| Theta hat (MLE) | 1450 | Theta star (bias corrected MLE) | 1509 |
| nu hat (MLE) | 122.9 | nu star (bias corrected) | 118.1 |
| MLE Mean (bias corrected) | 1485 | MLE Sd (bias corrected) | 1497 |
| | | Approximate Chi Square Value (0.05) | 94.02 |
| Adjusted Level of Significance | 0.046 | Adjusted Chi Square Value | 93.49 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 1866 | 95% Adjusted Gamma UCL (use when n<50) | 1876 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.83 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 4.07E-09 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.175 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.114 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 1.548 | Mean of logged Data | 6.741 |
| Maximum of Logged Data | 8.672 | SD of logged Data | 1.449 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 4371 | 90% Chebyshev (MVUE) UCL | 4083 |
| 95% Chebyshev (MVUE) UCL | 4873 | 97.5% Chebyshev (MVUE) UCL | 5969 |
| 99% Chebyshev (MVUE) UCL | 8124 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 1738 | 95% Jackknife UCL | 1742 |
| 95% Standard Bootstrap UCL | 1727 | 95% Bootstrap-t UCL | 1780 |
| 95% Hall's Bootstrap UCL | 1778 | 95% Percentile Bootstrap UCL | 1748 |
| 95% BCA Bootstrap UCL | 1766 | | |
| 90% Chebyshev(Mean, Sd) UCL | 1946 | 95% Chebyshev(Mean, Sd) UCL | 2154 |
| 97.5% Chebyshev(Mean, Sd) UCL | 2443 | 99% Chebyshev(Mean, Sd) UCL | 3012 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Student's-t UCL | 1742 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**MANGANESE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 62 | Number of Distinct Observations | 59 |
| | | Number of Missing Observations | 1 |
| Minimum | 4 | Mean | 90.77 |
| Maximum | 569 | Median | 70.35 |
| SD | 92.24 | Std. Error of Mean | 11.71 |
| Coefficient of Variation | 1.016 | Skewness | 3.132 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.704 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 3.33E-16 | Data Not Normal at 5% Significance Level | |

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.2 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.113 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 110.3 | 95% Adjusted-CLT UCL (Chen-1995) | 115 |
| | | 95% Modified-t UCL (Johnson-1978) | 111.1 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.682 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.771 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.0957 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.115 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.406 | k star (bias corrected MLE) | 1.349 |
| Theta hat (MLE) | 64.55 | Theta star (bias corrected MLE) | 67.3 |
| nu hat (MLE) | 174.4 | nu star (bias corrected) | 167.3 |
| MLE Mean (bias corrected) | 90.77 | MLE Sd (bias corrected) | 78.16 |
| | | Approximate Chi Square Value (0.05) | 138.3 |
| Adjusted Level of Significance | 0.0461 | Adjusted Chi Square Value | 137.7 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50) | 109.7 | 95% Adjusted Gamma UCL (use when n<50) | 110.2 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.949 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 0.0259 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.122 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.113 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 1.386 | Mean of logged Data | 4.112 |
| Maximum of Logged Data | 6.344 | SD of logged Data | 0.97 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 129 | 90% Chebyshev (MVUE) UCL | 138.7 |
| 95% Chebyshev (MVUE) UCL | 157.7 | 97.5% Chebyshev (MVUE) UCL | 184.1 |
| 99% Chebyshev (MVUE) UCL | 235.9 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 110 | 95% Jackknife UCL | 110.3 |
| 95% Standard Bootstrap UCL | 110.2 | 95% Bootstrap-t UCL | 120.6 |

| | | | |
|---|---|---|---|
| 95% Hall's Bootstrap UCL | 131.5 | 95% Percentile Bootstrap UCL | 110.4 |
| 95% BCA Bootstrap UCL | 115.2 | | |
| 90% Chebyshev(Mean, Sd) UCL | 125.9 | 95% Chebyshev(Mean, Sd) UCL | 141.8 |
| 97.5% Chebyshev(Mean, Sd) UCL | 163.9 | 99% Chebyshev(Mean, Sd) UCL | 207.3 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Approximate Gamma UCL | 109.7 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**VANADIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 62 | Number of Distinct Observations | 59 |
| | | Number of Missing Observations | 1 |
| Number of Detects | 61 | Number of Non-Detects | 1 |
| Number of Distinct Detects | 58 | Number of Distinct Non-Detects | 1 |
| Minimum Detect | 2 | Minimum Non-Detect | 1.1 |
| Maximum Detect | 78.8 | Maximum Non-Detect | 1.1 |
| Variance Detects | 577 | Percent Non-Detects | 1.61% |
| Mean Detects | 43.14 | SD Detects | 24.02 |
| Median Detects | 49.6 | CV Detects | 0.557 |
| Skewness Detects | -0.352 | Kurtosis Detects | -1.252 |
| Mean of Logged Detects | 3.466 | SD of Logged Detects | 0.954 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.902 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 4.35E-05 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.134 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.113 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 42.46 | Standard Error of Mean | 3.101 |
| SD | 24.22 | 95% KM (BCA) UCL | 47.56 |
| 95% KM (t) UCL | 47.64 | 95% KM (Percentile Bootstrap) UCL | 47.39 |
| 95% KM (z) UCL | 47.56 | 95% KM Bootstrap t UCL | 47.47 |
| 90% KM Chebyshev UCL | 51.76 | 95% KM Chebyshev UCL | 55.98 |
| 97.5% KM Chebyshev UCL | 61.82 | 99% KM Chebyshev UCL | 73.31 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 3.179 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.765 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.208 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.116 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.825 | k star (bias corrected MLE) | 1.746 |
| Theta hat (MLE) | 23.64 | Theta star (bias corrected MLE) | 24.7 |
| nu hat (MLE) | 222.7 | nu star (bias corrected) | 213 |
| MLE Mean (bias corrected) | 43.14 | MLE Sd (bias corrected) | 32.64 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 3.074 | nu hat (KM) | 381.2 |
| Approximate Chi Square Value (381.23, α) | 337 | Adjusted Chi Square Value (381.23, β) | 336 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 48.04 | 95% Gamma Adjusted KM-UCL (use when n<50) | 48.18 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 2 | Mean | 42.66 |
| Maximum | 78.8 | Median | 49.5 |
| SD | 24.12 | CV | 0.565 |
| k hat (MLE) | 1.809 | k star (bias corrected MLE) | 1.732 |
| Theta hat (MLE) | 23.58 | Theta star (bias corrected MLE) | 24.63 |
| nu hat (MLE) | 224.3 | nu star (bias corrected) | 214.8 |
| MLE Mean (bias corrected) | 42.66 | MLE Sd (bias corrected) | 32.41 |
| | | Adjusted Level of Significance (β) | 0.0461 |
| Approximate Chi Square Value (214.78, α) | 181.9 | Adjusted Chi Square Value (214.78, β) | 181.1 |
| 95% Gamma Approximate UCL (use when n>=50) | 50.38 | 95% Gamma Adjusted UCL (use when n<50) | 50.58 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.22 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.113 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 42.5 | Mean in Log Scale | 3.429 |
| SD in Original Scale | 24.35 | SD in Log Scale | 0.989 |
| 95% t UCL (assumes normality of ROS data) | 47.66 | 95% Percentile Bootstrap UCL | 47.51 |
| 95% BCA Bootstrap UCL | 47.43 | 95% Bootstrap t UCL | 47.57 |
| 95% H-UCL (Log ROS) | 66.86 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 42.45 | Mean in Log Scale | 3.401 |
| SD in Original Scale | 24.43 | SD in Log Scale | 1.078 |
| 95% t UCL (Assumes normality) | 47.63 | 95% H-Stat UCL | 73.38 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (Chebyshev) UCL | 55.98 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**ZINC**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 62 | Number of Distinct Observations | 58 |
| | | Number of Missing Observations | 1 |
| Minimum | 9.9 | Mean | 968.8 |
| Maximum | 2540 | Median | 921.5 |
| SD | 708.1 | Std. Error of Mean | 89.93 |
| Coefficient of Variation | 0.731 | Skewness | 0.338 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.924 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 7.69E-04 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.106 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.113 | Data appear Normal at 5% Significance Level | |

Data appear Approximate Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 1119 | 95% Adjusted-CLT UCL (Chen-1995) | 1121 |
| | | 95% Modified-t UCL (Johnson-1978) | 1120 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.417 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.777 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.134 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.116 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.111 | k star (bias corrected MLE) | 1.068 |
| Theta hat (MLE) | 872.3 | Theta star (bias corrected MLE) | 907.4 |
| nu hat (MLE) | 137.7 | nu star (bias corrected) | 132.4 |
| MLE Mean (bias corrected) | 968.8 | MLE Sd (bias corrected) | 937.6 |
| | | Approximate Chi Square Value (0.05) | 106.8 |
| Adjusted Level of Significance | 0.0461 | Adjusted Chi Square Value | 106.3 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 1201 | 95% Adjusted Gamma UCL (use when n<50) | 1207 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.847 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 1.78E-08 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.163 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.113 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 2.293 | Mean of logged Data | 6.362 |
| Maximum of Logged Data | 7.84 | SD of logged Data | 1.319 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 2040 | 90% Chebyshev (MVUE) UCL | 2223 |
| 95% Chebyshev (MVUE) UCL | 2619 | 97.5% Chebyshev (MVUE) UCL | 3169 |
| 99% Chebyshev (MVUE) UCL | 4249 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 1117 | 95% Jackknife UCL | 1119 |
| 95% Standard Bootstrap UCL | 1118 | 95% Bootstrap-t UCL | 1131 |
| 95% Hall's Bootstrap UCL | 1120 | 95% Percentile Bootstrap UCL | 1119 |
| 95% BCA Bootstrap UCL | 1116 | | |
| 90% Chebyshev(Mean, Sd) UCL | 1239 | 95% Chebyshev(Mean, Sd) UCL | 1361 |
| 97.5% Chebyshev(Mean, Sd) UCL | 1530 | 99% Chebyshev(Mean, Sd) UCL | 1864 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Student's-t UCL | 1119 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**AROCLOR-1254**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 54 | Number of Distinct Observations | 27 |
| | | Number of Missing Observations | 9 |
| Number of Detects | 4 | Number of Non-Detects | 50 |
| Number of Distinct Detects | 4 | Number of Distinct Non-Detects | 24 |
| Minimum Detect | 0.24 | Minimum Non-Detect | 0.039 |
| Maximum Detect | 0.38 | Maximum Non-Detect | 0.3 |
| Variance Detects | 0.00343 | Percent Non-Detects | 92.59% |
| Mean Detects | 0.308 | SD Detects | 0.0585 |
| Median Detects | 0.305 | CV Detects | 0.19 |

| | | | |
|---|---|---|---|
| Skewness Detects | 0.233 | Kurtosis Detects | 0.283 |
| Mean of Logged Detects | -1.193 | SD of Logged Detects | 0.192 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.998 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.748 | Detected Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.165 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.443 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.0602 | Standard Error of Mean | 0.0119 |
| SD | 0.0732 | 95% KM (BCA) UCL | N/A |
| 95% KM (t) UCL | 0.0801 | 95% KM (Percentile Bootstrap) UCL | N/A |
| 95% KM (z) UCL | 0.0797 | 95% KM Bootstrap t UCL | N/A |
| 90% KM Chebyshev UCL | 0.0958 | 95% KM Chebyshev UCL | 0.112 |
| 97.5% KM Chebyshev UCL | 0.134 | 99% KM Chebyshev UCL | 0.178 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.194 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.656 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.167 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.394 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 36.6 | k star (bias corrected MLE) | 9.318 |
| Theta hat (MLE) | 0.0084 | Theta star (bias corrected MLE) | 0.033 |
| nu hat (MLE) | 292.8 | nu star (bias corrected) | 74.54 |
| MLE Mean (bias corrected) | 0.308 | MLE Sd (bias corrected) | 0.101 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.677 | nu hat (KM) | 73.11 |
| Approximate Chi Square Value (73.11, α) | 54.42 | Adjusted Chi Square Value (73.11, β) | 53.98 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.0809 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.0816 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 0.0526 |
| Maximum | 0.38 | Median | 0.01 |
| SD | 0.0824 | CV | 1.566 |
| k hat (MLE) | 0.74 | k star (bias corrected MLE) | 0.711 |
| Theta hat (MLE) | 0.0711 | Theta star (bias corrected MLE) | 0.074 |
| nu hat (MLE) | 79.93 | nu star (bias corrected) | 76.82 |
| MLE Mean (bias corrected) | 0.0526 | MLE Sd (bias corrected) | 0.0624 |
| | | Adjusted Level of Significance (β) | 0.0456 |

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (76.82, α) | 57.63 | Adjusted Chi Square Value (76.82, β) | 57.18 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0701 | 95% Gamma Adjusted UCL (use when n<50) | N/A |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.999 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.748 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.158 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.443 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.119 | Mean in Log Scale | -2.219 |
| SD in Original Scale | 0.0618 | SD in Log Scale | 0.396 |
| 95% t UCL (assumes normality of ROS data) | 0.133 | 95% Percentile Bootstrap UCL | 0.134 |
| 95% BCA Bootstrap UCL | 0.136 | 95% Bootstrap t UCL | 0.14 |
| 95% H-UCL (Log ROS) | 0.13 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -3.08 | 95% H-UCL (KM -Log) | 0.0621 |
| KM SD (logged) | 0.556 | 95% Critical H Value (KM-Log) | 1.919 |
| KM Standard Error of Mean (logged) | 0.091 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.107 | Mean in Log Scale | -2.436 |
| SD in Original Scale | 0.0701 | SD in Log Scale | 0.668 |
| 95% t UCL (Assumes normality) | 0.123 | 95% H-Stat UCL | 0.131 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.0801 | 95% KM (Percentile Bootstrap) UCL | N/A |

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**BENZO(A)ANTHRACENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 58 | Number of Distinct Observations | 45 |
| | | Number of Missing Observations | 5 |
| Number of Detects | 56 | Number of Non-Detects | 2 |
| Number of Distinct Detects | 44 | Number of Distinct Non-Detects | 2 |
| Minimum Detect | 0.061 | Minimum Non-Detect | 0.39 |

| | | | |
|---|---|---|---|
| Maximum Detect | 6.5 | Maximum Non-Detect | 0.4 |
| Variance Detects | 1.241 | Percent Non-Detects | 3.45% |
| Mean Detects | 0.733 | SD Detects | 1.114 |
| Median Detects | 0.495 | CV Detects | 1.519 |
| Skewness Detects | 4.343 | Kurtosis Detects | 19.6 |
| Mean of Logged Detects | -0.756 | SD of Logged Detects | 0.861 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.447 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.365 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.118 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.716 | Standard Error of Mean | 0.144 |
| SD | 1.089 | 95% KM (BCA) UCL | 0.971 |
| 95% KM (t) UCL | 0.957 | 95% KM (Percentile Bootstrap) UCL | 0.976 |
| 95% KM (z) UCL | 0.953 | 95% KM Bootstrap t UCL | 1.347 |
| 90% KM Chebyshev UCL | 1.149 | 95% KM Chebyshev UCL | 1.345 |
| 97.5% KM Chebyshev UCL | 1.617 | 99% KM Chebyshev UCL | 2.151 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 3.262 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.774 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.242 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.122 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.264 | k star (bias corrected MLE) | 1.208 |
| Theta hat (MLE) | 0.58 | Theta star (bias corrected MLE) | 0.607 |
| nu hat (MLE) | 141.5 | nu star (bias corrected) | 135.3 |
| MLE Mean (bias corrected) | 0.733 | MLE Sd (bias corrected) | 0.667 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.433 | nu hat (KM) | 50.17 |
| Approximate Chi Square Value (50.17, α) | 34.91 | Adjusted Chi Square Value (50.17, β) | 34.58 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 1.029 | 95% Gamma Adjusted KM-UCL (use when n<50) | 1.039 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 0.708 |
| Maximum | 6.5 | Median | 0.48 |
| SD | 1.102 | CV | 1.556 |
| k hat (MLE) | 1.056 | k star (bias corrected MLE) | 1.013 |

| | | | |
|---|---|---|---|
| Theta hat (MLE) | 0.671 | Theta star (bias corrected MLE) | 0.7 |
| nu hat (MLE) | 122.5 | nu star (bias corrected) | 117.5 |
| MLE Mean (bias corrected) | 0.708 | MLE Sd (bias corrected) | 0.704 |
| | | Adjusted Level of Significance (β) | 0.0459 |
| Approximate Chi Square Value (117.45, α) | 93.43 | Adjusted Chi Square Value (117.45, β) | 92.89 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.89 | 95% Gamma Adjusted UCL (use when n<50) | 0.896 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.163 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.118 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.715 | Mean in Log Scale | -0.783 |
| SD in Original Scale | 1.098 | SD in Log Scale | 0.858 |
| 95% t UCL (assumes normality of ROS data) | 0.956 | 95% Percentile Bootstrap UCL | 0.976 |
| 95% BCA Bootstrap UCL | 1.061 | 95% Bootstrap t UCL | 1.292 |
| 95% H-UCL (Log ROS) | 0.847 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.715 | Mean in Log Scale | -0.785 |
| SD in Original Scale | 1.099 | SD in Log Scale | 0.86 |
| 95% t UCL (Assumes normality) | 0.956 | 95% H-Stat UCL | 0.847 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (Chebyshev) UCL | 1.345 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**BENZO(A)PYRENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 58 | Number of Distinct Observations | 48 |
| | | Number of Missing Observations | 5 |
| Number of Detects | 56 | Number of Non-Detects | 2 |
| Number of Distinct Detects | 46 | Number of Distinct Non-Detects | 2 |
| Minimum Detect | 0.082 | Minimum Non-Detect | 0.39 |
| Maximum Detect | 6.2 | Maximum Non-Detect | 0.4 |
| Variance Detects | 0.989 | Percent Non-Detects | 3.45% |
| Mean Detects | 0.827 | SD Detects | 0.994 |
| Median Detects | 0.64 | CV Detects | 1.202 |

| | | | |
|---|---|---|---|
| Skewness Detects | 4.044 | Kurtosis Detects | 18.34 |
| Mean of Logged Detects | -0.545 | SD of Logged Detects | 0.818 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.535 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.324 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.118 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.807 | Standard Error of Mean | 0.129 |
| SD | 0.974 | 95% KM (BCA) UCL | 1.057 |
| 95% KM (t) UCL | 1.023 | 95% KM (Percentile Bootstrap) UCL | 1.023 |
| 95% KM (z) UCL | 1.02 | 95% KM Bootstrap t UCL | 1.263 |
| 90% KM Chebyshev UCL | 1.195 | 95% KM Chebyshev UCL | 1.37 |
| 97.5% KM Chebyshev UCL | 1.614 | 99% KM Chebyshev UCL | 2.092 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.365 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.768 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.198 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.121 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.551 | k star (bias corrected MLE) | 1.48 |
| Theta hat (MLE) | 0.533 | Theta star (bias corrected MLE) | 0.559 |
| nu hat (MLE) | 173.7 | nu star (bias corrected) | 165.7 |
| MLE Mean (bias corrected) | 0.827 | MLE Sd (bias corrected) | 0.68 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.687 | nu hat (KM) | 79.69 |
| Approximate Chi Square Value (79.69, α) | 60.12 | Adjusted Chi Square Value (79.69, β) | 59.69 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 1.07 | 95% Gamma Adjusted KM-UCL (use when n<50) | 1.078 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.0266 | Mean | 0.8 |
| Maximum | 6.2 | Median | 0.63 |
| SD | 0.988 | CV | 1.235 |
| k hat (MLE) | 1.31 | k star (bias corrected MLE) | 1.253 |
| Theta hat (MLE) | 0.611 | Theta star (bias corrected MLE) | 0.638 |
| nu hat (MLE) | 151.9 | nu star (bias corrected) | 145.4 |
| MLE Mean (bias corrected) | 0.8 | MLE Sd (bias corrected) | 0.714 |
| | | Adjusted Level of Significance (β) | 0.0459 |

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (145.38, α) | 118.5 | Adjusted Chi Square Value (145.38, β) | 117.9 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.981 | 95% Gamma Adjusted UCL (use when n<50) | 0.986 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.162 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.118 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.807 | Mean in Log Scale | -0.575 |
| SD in Original Scale | 0.983 | SD in Log Scale | 0.819 |
| 95% t UCL (assumes normality of ROS data) | 1.023 | 95% Percentile Bootstrap UCL | 1.027 |
| 95% BCA Bootstrap UCL | 1.133 | 95% Bootstrap t UCL | 1.248 |
| 95% H-UCL (Log ROS) | 0.993 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.806 | Mean in Log Scale | -0.582 |
| SD in Original Scale | 0.984 | SD in Log Scale | 0.827 |
| 95% t UCL (Assumes normality) | 1.022 | 95% H-Stat UCL | 0.996 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (Chebyshev) UCL | 1.37 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**BENZO(B)FLUORANTHENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 58 | Number of Distinct Observations | 45 |
| | | Number of Missing Observations | 5 |
| Number of Detects | 56 | Number of Non-Detects | 2 |
| Number of Distinct Detects | 44 | Number of Distinct Non-Detects | 2 |
| Minimum Detect | 0.089 | Minimum Non-Detect | 0.39 |
| Maximum Detect | 9.9 | Maximum Non-Detect | 0.4 |
| Variance Detects | 2.6 | Percent Non-Detects | 3.45% |
| Mean Detects | 1.142 | SD Detects | 1.613 |
| Median Detects | 0.77 | CV Detects | 1.411 |
| Skewness Detects | 4.248 | Kurtosis Detects | 19.63 |
| Mean of Logged Detects | -0.299 | SD of Logged Detects | 0.875 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.496 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.336 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.118 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 1.11 | Standard Error of Mean | 0.209 |
| SD | 1.58 | 95% KM (BCA) UCL | 1.531 |
| 95% KM (t) UCL | 1.46 | 95% KM (Percentile Bootstrap) UCL | 1.482 |
| 95% KM (z) UCL | 1.454 | 95% KM Bootstrap t UCL | 1.978 |
| 90% KM Chebyshev UCL | 1.738 | 95% KM Chebyshev UCL | 2.023 |
| 97.5% KM Chebyshev UCL | 2.417 | 99% KM Chebyshev UCL | 3.193 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.245 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.773 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.204 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.122 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.298 | k star (bias corrected MLE) | 1.24 |
| Theta hat (MLE) | 0.88 | Theta star (bias corrected MLE) | 0.921 |
| nu hat (MLE) | 145.3 | nu star (bias corrected) | 138.9 |
| MLE Mean (bias corrected) | 1.142 | MLE Sd (bias corrected) | 1.026 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.494 | nu hat (KM) | 57.29 |
| Approximate Chi Square Value (57.29, α) | 40.89 | Adjusted Chi Square Value (57.29, β) | 40.54 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 1.555 | 95% Gamma Adjusted KM-UCL (use when n<50) | 1.569 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 1.103 |
| Maximum | 9.9 | Median | 0.735 |
| SD | 1.598 | CV | 1.448 |
| k hat (MLE) | 1.051 | k star (bias corrected MLE) | 1.008 |
| Theta hat (MLE) | 1.05 | Theta star (bias corrected MLE) | 1.095 |
| nu hat (MLE) | 121.9 | nu star (bias corrected) | 116.9 |
| MLE Mean (bias corrected) | 1.103 | MLE Sd (bias corrected) | 1.099 |
| | | Adjusted Level of Significance (β) | 0.0459 |
| Approximate Chi Square Value (116.94, α) | 92.97 | Adjusted Chi Square Value (116.94, β) | 92.43 |
| 95% Gamma Approximate UCL (use when n>=50) | 1.388 | 95% Gamma Adjusted UCL (use when n<50) | 1.396 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.136 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.118 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data appear Approximate Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 1.11 | Mean in Log Scale | -0.342 |
| SD in Original Scale | 1.593 | SD in Log Scale | 0.89 |
| 95% t UCL (assumes normality of ROS data) | 1.46 | 95% Percentile Bootstrap UCL | 1.487 |
| 95% BCA Bootstrap UCL | 1.659 | 95% Bootstrap t UCL | 1.849 |
| 95% H-UCL (Log ROS) | 1.37 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -0.346 | 95% H-UCL (KM -Log) | 1.368 |
| KM SD (logged) | 0.892 | 95% Critical H Value (KM-Log) | 2.218 |
| KM Standard Error of Mean (logged) | 0.119 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 1.11 | Mean in Log Scale | -0.345 |
| SD in Original Scale | 1.594 | SD in Log Scale | 0.894 |
| 95% t UCL (Assumes normality) | 1.46 | 95% H-Stat UCL | 1.374 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (Chebyshev) UCL | 2.023 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**BENZO(K)FLUORANTHENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 58 | Number of Distinct Observations | 46 |
| | | Number of Missing Observations | 5 |
| Number of Detects | 56 | Number of Non-Detects | 2 |
| Number of Distinct Detects | 44 | Number of Distinct Non-Detects | 2 |
| Minimum Detect | 0.074 | Minimum Non-Detect | 0.39 |
| Maximum Detect | 9.7 | Maximum Non-Detect | 0.4 |
| Variance Detects | 2.693 | Percent Non-Detects | 3.45% |
| Mean Detects | 1.062 | SD Detects | 1.641 |
| Median Detects | 0.7 | CV Detects | 1.546 |
| Skewness Detects | 4.502 | Kurtosis Detects | 21.03 |
| Mean of Logged Detects | -0.394 | SD of Logged Detects | 0.878 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.44 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.335 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.118 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 1.032 | Standard Error of Mean | 0.213 |
| SD | 1.606 | 95% KM (BCA) UCL | 1.412 |
| 95% KM (t) UCL | 1.388 | 95% KM (Percentile Bootstrap) UCL | 1.389 |
| 95% KM (z) UCL | 1.382 | 95% KM Bootstrap t UCL | 2.113 |
| 90% KM Chebyshev UCL | 1.67 | 95% KM Chebyshev UCL | 1.959 |
| 97.5% KM Chebyshev UCL | 2.361 | 99% KM Chebyshev UCL | 3.149 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.952 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.774 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.2 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.122 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.243 | k star (bias corrected MLE) | 1.188 |
| Theta hat (MLE) | 0.854 | Theta star (bias corrected MLE) | 0.894 |
| nu hat (MLE) | 139.2 | nu star (bias corrected) | 133.1 |
| MLE Mean (bias corrected) | 1.062 | MLE Sd (bias corrected) | 0.974 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.413 | nu hat (KM) | 47.91 |
| Approximate Chi Square Value (47.91, α) | 33.02 | Adjusted Chi Square Value (47.91, β) | 32.71 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 1.497 | 95% Gamma Adjusted KM-UCL (use when n<50) | 1.512 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 1.025 |
| Maximum | 9.7 | Median | 0.69 |
| SD | 1.623 | CV | 1.583 |
| k hat (MLE) | 1.021 | k star (bias corrected MLE) | 0.98 |
| Theta hat (MLE) | 1.004 | Theta star (bias corrected MLE) | 1.047 |
| nu hat (MLE) | 118.4 | nu star (bias corrected) | 113.6 |
| MLE Mean (bias corrected) | 1.025 | MLE Sd (bias corrected) | 1.036 |
| | | Adjusted Level of Significance (β) | 0.0459 |
| Approximate Chi Square Value (113.64, α) | 90.03 | Adjusted Chi Square Value (113.64, β) | 89.5 |
| 95% Gamma Approximate UCL (use when n>=50) | 1.294 | 95% Gamma Adjusted UCL (use when n<50) | 1.302 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.135 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.118 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 1.032 | Mean in Log Scale | -0.434 |
| SD in Original Scale | 1.62 | SD in Log Scale | 0.889 |
| 95% t UCL (assumes normality of ROS data) | 1.388 | 95% Percentile Bootstrap UCL | 1.411 |
| 95% BCA Bootstrap UCL | 1.594 | 95% Bootstrap t UCL | 2.11 |
| 95% H-UCL (Log ROS) | 1.249 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 1.032 | Mean in Log Scale | -0.436 |
| SD in Original Scale | 1.62 | SD in Log Scale | 0.892 |
| 95% t UCL (Assumes normality) | 1.387 | 95% H-Stat UCL | 1.25 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (Chebyshev) UCL | 1.959 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**DIBENZO(A,H)ANTHRACENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 54 | Number of Distinct Observations | 32 |
| | | Number of Missing Observations | 9 |
| Number of Detects | 21 | Number of Non-Detects | 33 |
| Number of Distinct Detects | 17 | Number of Distinct Non-Detects | 16 |
| Minimum Detect | 0.064 | Minimum Non-Detect | 0.39 |
| Maximum Detect | 1 | Maximum Non-Detect | 3 |
| Variance Detects | 0.0537 | Percent Non-Detects | 61.11% |
| Mean Detects | 0.233 | SD Detects | 0.232 |
| Median Detects | 0.16 | CV Detects | 0.996 |
| Skewness Detects | 2.503 | Kurtosis Detects | 6.29 |
| Mean of Logged Detects | -1.757 | SD of Logged Detects | 0.727 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.66 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.908 | Detected Data Not Normal at 5% Significance Level | |

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.301 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.193 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.216 | Standard Error of Mean | 0.041 |
| SD | 0.204 | 95% KM (BCA) UCL | 0.296 |
| 95% KM (t) UCL | 0.285 | 95% KM (Percentile Bootstrap) UCL | 0.287 |
| 95% KM (z) UCL | 0.284 | 95% KM Bootstrap t UCL | 0.346 |
| 90% KM Chebyshev UCL | 0.339 | 95% KM Chebyshev UCL | 0.395 |
| 97.5% KM Chebyshev UCL | 0.472 | 99% KM Chebyshev UCL | 0.624 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.057 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.755 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.216 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.192 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.828 | k star (bias corrected MLE) | 1.598 |
| Theta hat (MLE) | 0.127 | Theta star (bias corrected MLE) | 0.145 |
| nu hat (MLE) | 76.77 | nu star (bias corrected) | 67.13 |
| MLE Mean (bias corrected) | 0.233 | MLE Sd (bias corrected) | 0.184 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 1.122 | nu hat (KM) | 121.1 |
| Approximate Chi Square Value (121.15, α) | 96.73 | Adjusted Chi Square Value (121.15, β) | 96.14 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.271 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.272 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.0466 | Mean | 0.201 |
| Maximum | 1 | Median | 0.171 |
| SD | 0.162 | CV | 0.806 |
| k hat (MLE) | 2.51 | k star (bias corrected MLE) | 2.383 |
| Theta hat (MLE) | 0.0799 | Theta star (bias corrected MLE) | 0.0842 |
| nu hat (MLE) | 271.1 | nu star (bias corrected) | 257.3 |
| MLE Mean (bias corrected) | 0.201 | MLE Sd (bias corrected) | 0.13 |
| | | Adjusted Level of Significance (β) | 0.0456 |
| Approximate Chi Square Value (257.34, α) | 221.2 | Adjusted Chi Square Value (257.34, β) | 220.3 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.233 | 95% Gamma Adjusted UCL (use when n<50) | 0.234 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.93 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.908 | Detected Data appear Lognormal at 5% Significance Level | |

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.156 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.193 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.196 | Mean in Log Scale | -1.795 |
| SD in Original Scale | 0.153 | SD in Log Scale | 0.525 |
| 95% t UCL (assumes normality of ROS data) | 0.23 | 95% Percentile Bootstrap UCL | 0.232 |
| 95% BCA Bootstrap UCL | 0.243 | 95% Bootstrap t UCL | 0.26 |
| 95% H-UCL (Log ROS) | 0.219 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -1.799 | 95% H-UCL (KM -Log) | 0.249 |
| KM SD (logged) | 0.671 | 95% Critical H Value (KM-Log) | 2.007 |
| KM Standard Error of Mean (logged) | 0.142 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.682 | Mean in Log Scale | -0.782 |
| SD in Original Scale | 0.493 | SD in Log Scale | 1.014 |
| 95% t UCL (Assumes normality) | 0.794 | 95% H-Stat UCL | 1.058 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Lognormal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.285 | 95% KM (% Bootstrap) UCL | 0.287 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**INDENO(1,2,3-CD)PYRENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 56 | Number of Distinct Observations | 43 |
| | | Number of Missing Observations | 7 |
| Number of Detects | 50 | Number of Non-Detects | 6 |
| Number of Distinct Detects | 38 | Number of Distinct Non-Detects | 6 |
| Minimum Detect | 0.052 | Minimum Non-Detect | 0.39 |
| Maximum Detect | 3.8 | Maximum Non-Detect | 3 |
| Variance Detects | 0.34 | Percent Non-Detects | 10.71% |
| Mean Detects | 0.43 | SD Detects | 0.584 |
| Median Detects | 0.33 | CV Detects | 1.356 |
| Skewness Detects | 4.576 | Kurtosis Detects | 24.08 |
| Mean of Logged Detects | -1.245 | SD of Logged Detects | 0.849 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.504 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.947 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.319 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.125 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.417 | Standard Error of Mean | 0.0753 |
| SD | 0.552 | 95% KM (BCA) UCL | 0.574 |
| 95% KM (t) UCL | 0.542 | 95% KM (Percentile Bootstrap) UCL | 0.539 |
| 95% KM (z) UCL | 0.54 | 95% KM Bootstrap t UCL | 0.706 |
| 90% KM Chebyshev UCL | 0.642 | 95% KM Chebyshev UCL | 0.745 |
| 97.5% KM Chebyshev UCL | 0.887 | 99% KM Chebyshev UCL | 1.166 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.875 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.77 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.19 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.128 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.389 | k star (bias corrected MLE) | 1.319 |
| Theta hat (MLE) | 0.31 | Theta star (bias corrected MLE) | 0.326 |
| nu hat (MLE) | 138.9 | nu star (bias corrected) | 131.9 |
| MLE Mean (bias corrected) | 0.43 | MLE Sd (bias corrected) | 0.375 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.568 | nu hat (KM) | 63.66 |
| Approximate Chi Square Value (63.66, α) | 46.31 | Adjusted Chi Square Value (63.66, β) | 45.92 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.573 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.578 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.052 | Mean | 0.409 |
| Maximum | 3.8 | Median | 0.305 |
| SD | 0.555 | CV | 1.357 |
| k hat (MLE) | 1.465 | k star (bias corrected MLE) | 1.399 |
| Theta hat (MLE) | 0.279 | Theta star (bias corrected MLE) | 0.292 |
| nu hat (MLE) | 164.1 | nu star (bias corrected) | 156.7 |
| MLE Mean (bias corrected) | 0.409 | MLE Sd (bias corrected) | 0.346 |
| | | Adjusted Level of Significance (β) | 0.0457 |
| Approximate Chi Square Value (156.67, α) | 128.7 | Adjusted Chi Square Value (156.67, β) | 128.1 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.498 | 95% Gamma Adjusted UCL (use when n<50) | 0.5 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.947 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.947 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.126 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.125 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data appear Approximate Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.411 | Mean in Log Scale | -1.261 |
| SD in Original Scale | 0.554 | SD in Log Scale | 0.804 |
| 95% t UCL (assumes normality of ROS data) | 0.535 | 95% Percentile Bootstrap UCL | 0.534 |
| 95% BCA Bootstrap UCL | 0.606 | 95% Bootstrap t UCL | 0.715 |
| 95% H-UCL (Log ROS) | 0.493 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -1.264 | 95% H-UCL (KM -Log) | 0.507 |
| KM SD (logged) | 0.829 | 95% Critical H Value (KM-Log) | 2.151 |
| KM Standard Error of Mean (logged) | 0.117 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.468 | Mean in Log Scale | -1.166 |
| SD in Original Scale | 0.583 | SD in Log Scale | 0.875 |
| 95% t UCL (Assumes normality) | 0.598 | 95% H-Stat UCL | 0.592 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (Chebyshev) UCL | 0.745 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**NAPHTHALENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 54 | Number of Distinct Observations | 33 |
| | | Number of Missing Observations | 9 |
| Number of Detects | 14 | Number of Non-Detects | 40 |
| Number of Distinct Detects | 13 | Number of Distinct Non-Detects | 21 |
| Minimum Detect | 0.064 | Minimum Non-Detect | 0.39 |
| Maximum Detect | 25 | Maximum Non-Detect | 3 |
| Variance Detects | 43.79 | Percent Non-Detects | 74.07% |
| Mean Detects | 2.345 | SD Detects | 6.618 |
| Median Detects | 0.155 | CV Detects | 2.822 |

| | | | |
|---|---|---|---|
| Skewness Detects | 3.567 | Kurtosis Detects | 12.99 |
| Mean of Logged Detects | -1.145 | SD of Logged Detects | 1.719 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.393 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.874 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.401 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.237 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.753 | Standard Error of Mean | 0.481 |
| SD | 3.388 | 95% KM (BCA) UCL | 1.726 |
| 95% KM (t) UCL | 1.558 | 95% KM (Percentile Bootstrap) UCL | 1.655 |
| 95% KM (z) UCL | 1.544 | 95% KM Bootstrap t UCL | 5.603 |
| 90% KM Chebyshev UCL | 2.195 | 95% KM Chebyshev UCL | 2.848 |
| 97.5% KM Chebyshev UCL | 3.754 | 99% KM Chebyshev UCL | 5.534 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.309 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.825 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.365 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.247 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.339 | k star (bias corrected MLE) | 0.314 |
| Theta hat (MLE) | 6.925 | Theta star (bias corrected MLE) | 7.476 |
| nu hat (MLE) | 9.48 | nu star (bias corrected) | 8.782 |
| MLE Mean (bias corrected) | 2.345 | MLE Sd (bias corrected) | 4.187 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.0495 | nu hat (KM) | 5.341 |
| Approximate Chi Square Value (5.34, α) | 1.313 | Adjusted Chi Square Value (5.34, β) | 1.26 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 3.065 | 95% Gamma Adjusted KM-UCL (use when n<50) | 3.194 |

Gamma (KM) may not be used when k hat (KM) is < 0.1

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 0.732 |
| Maximum | 25 | Median | 0.01 |
| SD | 3.433 | CV | 4.693 |
| k hat (MLE) | 0.259 | k star (bias corrected MLE) | 0.257 |
| Theta hat (MLE) | 2.824 | Theta star (bias corrected MLE) | 2.846 |
| nu hat (MLE) | 27.99 | nu star (bias corrected) | 27.76 |
| MLE Mean (bias corrected) | 0.732 | MLE Sd (bias corrected) | 1.443 |

| | | | |
|---|---|---|---|
| | | Adjusted Level of Significance (β) | 0.0456 |
| Approximate Chi Square Value (27.76, α) | 16.74 | Adjusted Chi Square Value (27.76, β) | 16.51 |
| 95% Gamma Approximate UCL (use when n>=50) | 1.213 | 95% Gamma Adjusted UCL (use when n<50) | 1.23 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.787 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.874 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.285 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.237 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.768 | Mean in Log Scale | -1.572 |
| SD in Original Scale | 3.412 | SD in Log Scale | 1.037 |
| 95% t UCL (assumes normality of ROS data) | 1.545 | 95% Percentile Bootstrap UCL | 1.668 |
| 95% BCA Bootstrap UCL | 2.523 | 95% Bootstrap t UCL | 8.297 |
| 95% H-UCL (Log ROS) | 0.498 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 1.267 | Mean in Log Scale | -0.496 |
| SD in Original Scale | 3.359 | SD in Log Scale | 1.075 |
| 95% t UCL (Assumes normality) | 2.032 | 95% H-Stat UCL | 1.549 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (Chebyshev) UCL | 2.848 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**TRICHLOROETHYLENE (TCE)**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 54 | Number of Distinct Observations | 31 |
| | | Number of Missing Observations | 9 |
| Number of Detects | 4 | Number of Non-Detects | 50 |
| Number of Distinct Detects | 4 | Number of Distinct Non-Detects | 27 |
| Minimum Detect | 0.28 | Minimum Non-Detect | 0.01 |
| Maximum Detect | 0.5 | Maximum Non-Detect | 0.18 |
| Variance Detects | 0.0103 | Percent Non-Detects | 92.59% |
| Mean Detects | 0.403 | SD Detects | 0.101 |
| Median Detects | 0.415 | CV Detects | 0.252 |

| | | | |
|---|---|---|---|
| Skewness Detects | -0.435 | Kurtosis Detects | -2.813 |
| Mean of Logged Detects | -0.936 | SD of Logged Detects | 0.266 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.932 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.748 | Detected Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.247 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.443 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.0391 | Standard Error of Mean | 0.0166 |
| SD | 0.106 | 95% KM (BCA) UCL | N/A |
| 95% KM (t) UCL | 0.0668 | 95% KM (Percentile Bootstrap) UCL | N/A |
| 95% KM (z) UCL | 0.0664 | 95% KM Bootstrap t UCL | N/A |
| 90% KM Chebyshev UCL | 0.0888 | 95% KM Chebyshev UCL | 0.111 |
| 97.5% KM Chebyshev UCL | 0.143 | 99% KM Chebyshev UCL | 0.204 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.319 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.657 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.282 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.394 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 19.67 | k star (bias corrected MLE) | 5.084 |
| Theta hat (MLE) | 0.0205 | Theta star (bias corrected MLE) | 0.0792 |
| nu hat (MLE) | 157.3 | nu star (bias corrected) | 40.67 |
| MLE Mean (bias corrected) | 0.403 | MLE Sd (bias corrected) | 0.179 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.137 | nu hat (KM) | 14.8 |
| Approximate Chi Square Value (14.80, α) | 7.126 | Adjusted Chi Square Value (14.80, β) | 6.979 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.0812 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.0829 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 0.041 |
| Maximum | 0.5 | Median | 0.01 |
| SD | 0.107 | CV | 2.598 |
| k hat (MLE) | 0.579 | k star (bias corrected MLE) | 0.559 |
| Theta hat (MLE) | 0.0709 | Theta star (bias corrected MLE) | 0.0734 |
| nu hat (MLE) | 62.48 | nu star (bias corrected) | 60.34 |
| MLE Mean (bias corrected) | 0.041 | MLE Sd (bias corrected) | 0.0549 |
| | | Adjusted Level of Significance (β) | 0.0456 |

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (60.34, α) | 43.48 | Adjusted Chi Square Value (60.34, β) | 43.09 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0569 | 95% Gamma Adjusted UCL (use when n<50) | N/A |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.924 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.748 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.251 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.443 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.0954 | Mean in Log Scale | -2.595 |
| SD in Original Scale | 0.0952 | SD in Log Scale | 0.621 |
| 95% t UCL (assumes normality of ROS data) | 0.117 | 95% Percentile Bootstrap UCL | 0.117 |
| 95% BCA Bootstrap UCL | 0.122 | 95% Bootstrap t UCL | 0.128 |
| 95% H-UCL (Log ROS) | 0.107 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -4.333 | 95% H-UCL (KM -Log) | 0.0282 |
| KM SD (logged) | 0.963 | 95% Critical H Value (KM-Log) | 2.281 |
| KM Standard Error of Mean (logged) | 0.151 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.0714 | Mean in Log Scale | -3.206 |
| SD in Original Scale | 0.101 | SD in Log Scale | 1.071 |
| 95% t UCL (Assumes normality) | 0.0944 | 95% H-Stat UCL | 0.103 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.0668 | 95% KM (Percentile Bootstrap) UCL | N/A |

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

| Analyte | Exp Area | Matrix | Valid Obs | Rec. UCL | Method | Max | EPC=Max |
|---|---|---|---|---|---|---|---|
| ALUMINUM | HC | Sediment | 122 | 8312 | 95% Approximate Gamma UCL | 30900 | FALSE |
| ANTIMONY | HC | Sediment | 122 | 2.5 | 95% KM (t) UCL | 17 | FALSE |
| ARSENIC | HC | Sediment | 116 | 386 | 95% KM (Chebyshev) UCL | 4460 | FALSE |
| BARIUM | HC | Sediment | 122 | 1005 | 95% Chebyshev (Mean, Sd) UCL | 7950 | FALSE |
| CADMIUM | HC | Sediment | 122 | 4.5 | 95% KM (Chebyshev) UCL | 17 | FALSE |
| CHROMIUM | HC | Sediment | 122 | 441 | 95% Chebyshev (Mean, Sd) UCL | 3430 | FALSE |
| COBALT | HC | Sediment | 122 | 5.0 | 95% KM (Chebyshev) UCL | 14 | FALSE |
| COPPER | HC | Sediment | 118 | 170 | 90% Chebyshev (MVUE) UCL | 1400 | FALSE |
| CYANIDE | HC | Sediment | 122 | 48 | 97.5% KM (Chebyshev) UCL | 360 | FALSE |
| IRON | HC | Sediment | 122 | 17121 | 95% Chebyshev (Mean, Sd) UCL | 46200 | FALSE |
| LEAD | HC | Sediment | 122 | 4802 | 90% Chebyshev (MVUE) UCL | 39200 | FALSE |
| MANGANESE | HC | Sediment | 122 | 81 | 95% Approximate Gamma UCL | 323 | FALSE |
| NICKEL | HC | Sediment | 122 | 33 | 95% Chebyshev (Mean, Sd) UCL | 549 | FALSE |
| THALLIUM | HC | Sediment | 122 | 1.6 | 95% KM (t) UCL | 9.9 | FALSE |
| VANADIUM | HC | Sediment | 122 | 24 | 95% Chebyshev (Mean, Sd) UCL | 81 | FALSE |
| ZINC | HC | Sediment | 106 | 486 | 90% Chebyshev (MVUE) UCL | 2770 | FALSE |
| AROCLOR-1254 | HC | Sediment | 122 | 0.14 | 95% KM (t) UCL | 1.3 | FALSE |
| AROCLOR-1260 | HC | Sediment | 122 | 0.058 | 95% KM (t) UCL | 0.29 | FALSE |
| BENZO(A)ANTHRACENE | HC | Sediment | 121 | 0.71 | 95% KM (BCA) UCL | 6.0 | FALSE |
| BENZO(A)PYRENE | HC | Sediment | 120 | 0.70 | 95% KM (BCA) UCL | 5.0 | FALSE |
| BENZO(B)FLUORANTHENE | HC | Sediment | 120 | 0.95 | 95% KM (Chebyshev) UCL | 4.6 | FALSE |
| DIBENZO(A,H)ANTHRACENE | HC | Sediment | 120 | 0.19 | 95% KM (t) UCL | 1.3 | FALSE |
| INDENO(1,2,3-CD)PYRENE | HC | Sediment | 120 | 0.39 | 95% KM (BCA) UCL | 2.6 | FALSE |

SD_HC_7.10.17.xlsx

## UCL Statistics for Data Sets with Non-Detects

| | |
|---|---|
| User Selected Options | |
| Date/Time of Computation | 7/10/2017 11:09:26 AM |
| From File | SD_HC_7.10.17.xlsx |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Number of Bootstrap Operations | 2000 |

## ALUMINUM

### General Statistics

| | | | |
|---|---|---|---|
| Total Number of Observations | 122 | Number of Distinct Observations | 111 |
| | | Number of Missing Observations | 0 |
| Minimum | 737 | Mean | 7300 |
| Maximum | 30900 | Median | 4973 |
| SD | 6215 | Std. Error of Mean | 562.7 |
| Coefficient of Variation | 0.851 | Skewness | 1.215 |

### Normal GOF Test

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.859 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 0 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.167 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0802 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

### Assuming Normal Distribution

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 8233 | 95% Adjusted-CLT UCL (Chen-1995) | 8292 |
| | | 95% Modified-t UCL (Johnson-1978) | 8243 |

### Gamma GOF Test

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.204 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.772 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.0809 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.0854 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data follow Appr. Gamma Distribution at 5% Significance Level

### Gamma Statistics

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.447 | k star (bias corrected MLE) | 1.417 |
| Theta hat (MLE) | 5044 | Theta star (bias corrected MLE) | 5151 |
| nu hat (MLE) | 353.1 | nu star (bias corrected) | 345.8 |
| MLE Mean (bias corrected) | 7300 | MLE Sd (bias corrected) | 6132 |
| | | Approximate Chi Square Value (0.05) | 303.7 |
| Adjusted Level of Significance | 0.048 | Adjusted Chi Square Value | 303.2 |

### Assuming Gamma Distribution

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50) | 8312 | 95% Adjusted Gamma UCL (use when n<50) | 8325 |

**Lognormal GOF Test**

| | | |
|---|---|---|
| Shapiro Wilk Test Statistic | 0.951 | **Shapiro Wilk Lognormal GOF Test** |
| 5% Shapiro Wilk P Value | 7.81E-04 | Data Not Lognormal at 5% Significance Level |
| Lilliefors Test Statistic | 0.0778 | **Lilliefors Lognormal GOF Test** |
| 5% Lilliefors Critical Value | 0.0802 | Data appear Lognormal at 5% Significance Level |

Data appear Approximate Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 6.603 | Mean of logged Data | 8.512 |
| Maximum of Logged Data | 10.34 | SD of logged Data | 0.922 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 9091 | 90% Chebyshev (MVUE) UCL | 9805 |
| 95% Chebyshev (MVUE) UCL | 10816 | 97.5% Chebyshev (MVUE) UCL | 12220 |
| 99% Chebyshev (MVUE) UCL | 14976 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 8226 | 95% Jackknife UCL | 8233 |
| 95% Standard Bootstrap UCL | 8247 | 95% Bootstrap-t UCL | 8329 |
| 95% Hall's Bootstrap UCL | 8313 | 95% Percentile Bootstrap UCL | 8229 |
| 95% BCA Bootstrap UCL | 8332 | | |
| 90% Chebyshev(Mean, Sd) UCL | 8988 | 95% Chebyshev(Mean, Sd) UCL | 9753 |
| 97.5% Chebyshev(Mean, Sd) UCL | 10814 | 99% Chebyshev(Mean, Sd) UCL | 12899 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Approximate Gamma UCL | 8312 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**ANTIMONY**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 122 | Number of Distinct Observations | 72 |
| Number of Detects | 35 | Number of Non-Detects | 87 |
| Number of Distinct Detects | 27 | Number of Distinct Non-Detects | 60 |
| Minimum Detect | 0.825 | Minimum Non-Detect | 0.745 |
| Maximum Detect | 16.6 | Maximum Non-Detect | 13.8 |
| Variance Detects | 11.84 | Percent Non-Detects | 71.31% |
| Mean Detects | 4.384 | SD Detects | 3.442 |
| Median Detects | 3.8 | CV Detects | 0.785 |
| Skewness Detects | 1.805 | Kurtosis Detects | 3.835 |
| Mean of Logged Detects | 1.218 | SD of Logged Detects | 0.733 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.828 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.934 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.195 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.15 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 2.063 | Standard Error of Mean | 0.236 |
| SD | 2.438 | 95% KM (BCA) UCL | 2.465 |
| 95% KM (t) UCL | 2.454 | 95% KM (Percentile Bootstrap) UCL | 2.468 |
| 95% KM (z) UCL | 2.451 | 95% KM Bootstrap t UCL | 2.521 |
| 90% KM Chebyshev UCL | 2.771 | 95% KM Chebyshev UCL | 3.092 |
| 97.5% KM Chebyshev UCL | 3.537 | 99% KM Chebyshev UCL | 4.411 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.367 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.759 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.101 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.151 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 2.079 | k star (bias corrected MLE) | 1.92 |
| Theta hat (MLE) | 2.108 | Theta star (bias corrected MLE) | 2.283 |
| nu hat (MLE) | 145.5 | nu star (bias corrected) | 134.4 |
| MLE Mean (bias corrected) | 4.384 | MLE Sd (bias corrected) | 3.164 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.716 | nu hat (KM) | 174.8 |
| Approximate Chi Square Value (174.75, α) | 145.2 | Adjusted Chi Square Value (174.75, β) | 144.9 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 2.484 | 95% Gamma Adjusted KM-UCL (use when n<50) | 2.489 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 1.329 |
| Maximum | 16.6 | Median | 0.01 |
| SD | 2.677 | CV | 2.015 |
| k hat (MLE) | 0.252 | k star (bias corrected MLE) | 0.251 |
| Theta hat (MLE) | 5.269 | Theta star (bias corrected MLE) | 5.284 |
| nu hat (MLE) | 61.54 | nu star (bias corrected) | 61.36 |
| MLE Mean (bias corrected) | 1.329 | MLE Sd (bias corrected) | 2.65 |
| | | Adjusted Level of Significance (β) | 0.048 |
| Approximate Chi Square Value (61.36, α) | 44.34 | Adjusted Chi Square Value (61.36, β) | 44.17 |
| 95% Gamma Approximate UCL (use when n>=50) | 1.839 | 95% Gamma Adjusted UCL (use when n<50) | 1.846 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.982 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.934 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.0851 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.15 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 1.83 | Mean in Log Scale | 0.133 |
| SD in Original Scale | 2.46 | SD in Log Scale | 0.867 |
| 95% t UCL (assumes normality of ROS data) | 2.199 | 95% Percentile Bootstrap UCL | 2.201 |
| 95% BCA Bootstrap UCL | 2.297 | 95% Bootstrap t UCL | 2.313 |
| 95% H-UCL (Log ROS) | 1.959 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | 0.337 | 95% H-UCL (KM -Log) | 2.197 |
| KM SD (logged) | 0.784 | 95% Critical H Value (KM-Log) | 2.008 |
| KM Standard Error of Mean (logged) | 0.0863 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 2.455 | Mean in Log Scale | 0.556 |
| SD in Original Scale | 2.418 | SD in Log Scale | 0.821 |
| 95% t UCL (Assumes normality) | 2.818 | 95% H-Stat UCL | 2.842 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Gamma Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 2.454 | 95% GROS Approximate Gamma UCL | 1.839 |
| 95% Approximate Gamma KM-UCL | 2.484 | | |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**ARSENIC**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 116 | Number of Distinct Observations | 113 |
| | | Number of Missing Observations | 6 |
| Number of Detects | 115 | Number of Non-Detects | 1 |
| Number of Distinct Detects | 112 | Number of Distinct Non-Detects | 1 |
| Minimum Detect | 3.6 | Minimum Non-Detect | 1.45 |
| Maximum Detect | 4460 | Maximum Non-Detect | 1.45 |
| Variance Detects | 244078 | Percent Non-Detects | 0.86% |

| | | | |
|---|---|---|---|
| Mean Detects | 188.1 | SD Detects | 494 |
| Median Detects | 49.9 | CV Detects | 2.626 |
| Skewness Detects | 6.476 | Kurtosis Detects | 50.88 |
| Mean of Logged Detects | 4.076 | SD of Logged Detects | 1.405 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.385 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.354 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0826 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 186.5 | Standard Error of Mean | 45.7 |
| SD | 490.1 | 95% KM (BCA) UCL | 266.7 |
| 95% KM (t) UCL | 262.3 | 95% KM (Percentile Bootstrap) UCL | 267.4 |
| 95% KM (z) UCL | 261.7 | 95% KM Bootstrap t UCL | 341.5 |
| 90% KM Chebyshev UCL | 323.6 | 95% KM Chebyshev UCL | 385.7 |
| 97.5% KM Chebyshev UCL | 471.9 | 99% KM Chebyshev UCL | 641.2 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 6.101 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.815 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.175 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.0903 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.54 | k star (bias corrected MLE) | 0.532 |
| Theta hat (MLE) | 348.2 | Theta star (bias corrected MLE) | 353.6 |
| nu hat (MLE) | 124.3 | nu star (bias corrected) | 122.4 |
| MLE Mean (bias corrected) | 188.1 | MLE Sd (bias corrected) | 257.9 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.145 | nu hat (KM) | 33.61 |
| Approximate Chi Square Value (33.61, α) | 21.35 | Adjusted Chi Square Value (33.61, β) | 21.23 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 293.6 | 95% Gamma Adjusted KM-UCL (use when n<50) | 295.3 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 186.5 |
| Maximum | 4460 | Median | 48.4 |
| SD | 492.2 | CV | 2.639 |
| k hat (MLE) | 0.515 | k star (bias corrected MLE) | 0.507 |
| Theta hat (MLE) | 362.2 | Theta star (bias corrected MLE) | 367.6 |
| nu hat (MLE) | 119.5 | nu star (bias corrected) | 117.7 |

| | | | |
|---|---|---|---|
| MLE Mean (bias corrected) | 186.5 | MLE Sd (bias corrected) | 261.8 |
| | | Adjusted Level of Significance (β) | 0.0479 |
| Approximate Chi Square Value (117.72, α) | 93.67 | Adjusted Chi Square Value (117.72, β) | 93.4 |
| 95% Gamma Approximate UCL (use when n>=50) | 234.4 | 95% Gamma Adjusted UCL (use when n<50) | 235.1 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.072 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0826 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 186.5 | Mean in Log Scale | 4.042 |
| SD in Original Scale | 492.2 | SD in Log Scale | 1.445 |
| 95% t UCL (assumes normality of ROS data) | 262.3 | 95% Percentile Bootstrap UCL | 266.5 |
| 95% BCA Bootstrap UCL | 301.5 | 95% Bootstrap t UCL | 335.6 |
| 95% H-UCL (Log ROS) | 231.9 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | 4.044 | 95% H-UCL (KM -Log) | 227.8 |
| KM SD (logged) | 1.434 | 95% Critical H Value (KM-Log) | 2.664 |
| KM Standard Error of Mean (logged) | 0.134 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 186.5 | Mean in Log Scale | 4.038 |
| SD in Original Scale | 492.2 | SD in Log Scale | 1.457 |
| 95% t UCL (Assumes normality) | 262.3 | 95% H-Stat UCL | 236.2 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Lognormal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (Chebyshev) UCL | 385.7 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**BARIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 122 | Number of Distinct Observations | 115 |
| | | Number of Missing Observations | 0 |
| Minimum | 19.2 | Mean | 558.2 |
| Maximum | 7950 | Median | 188 |

| | | | |
|---|---|---|---|
| SD | 1132 | Std. Error of Mean | 102.5 |
| Coefficient of Variation | 2.028 | Skewness | 4.639 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.47 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 0 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.317 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0802 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 728.1 | 95% Adjusted-CLT UCL (Chen-1995) | 772.8 |
| | | 95% Modified-t UCL (Johnson-1978) | 735.3 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 5.569 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.803 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.183 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.0876 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.668 | k star (bias corrected MLE) | 0.657 |
| Theta hat (MLE) | 835.4 | Theta star (bias corrected MLE) | 849.3 |
| nu hat (MLE) | 163 | nu star (bias corrected) | 160.4 |
| MLE Mean (bias corrected) | 558.2 | MLE Sd (bias corrected) | 688.6 |
| | | Approximate Chi Square Value (0.05) | 132.1 |
| Adjusted Level of Significance | 0.048 | Adjusted Chi Square Value | 131.8 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 677.7 | 95% Adjusted Gamma UCL (use when n<50) | 679.3 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.964 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 0.0254 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.0892 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.0802 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 2.955 | Mean of logged Data | 5.414 |
| Maximum of Logged Data | 8.981 | SD of logged Data | 1.263 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 659.9 | 90% Chebyshev (MVUE) UCL | 713.6 |
| 95% Chebyshev (MVUE) UCL | 813.5 | 97.5% Chebyshev (MVUE) UCL | 952.1 |
| 99% Chebyshev (MVUE) UCL | 1224 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 726.8 | 95% Jackknife UCL | 728.1 |
| 95% Standard Bootstrap UCL | 729.9 | 95% Bootstrap-t UCL | 830.1 |
| 95% Hall's Bootstrap UCL | 872.7 | 95% Percentile Bootstrap UCL | 741.1 |
| 95% BCA Bootstrap UCL | 773.1 | | |
| 90% Chebyshev(Mean, Sd) UCL | 865.7 | 95% Chebyshev(Mean, Sd) UCL | 1005 |
| 97.5% Chebyshev(Mean, Sd) UCL | 1198 | 99% Chebyshev(Mean, Sd) UCL | 1578 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 1005 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**CADMIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 122 | Number of Distinct Observations | 91 |
| Number of Detects | 119 | Number of Non-Detects | 3 |
| Number of Distinct Detects | 89 | Number of Distinct Non-Detects | 2 |
| Minimum Detect | 0.14 | Minimum Non-Detect | 0.08 |
| Maximum Detect | 17.1 | Maximum Non-Detect | 0.09 |
| Variance Detects | 12.79 | Percent Non-Detects | 2.46% |
| Mean Detects | 3.197 | SD Detects | 3.577 |
| Median Detects | 1.5 | CV Detects | 1.119 |
| Skewness Detects | 1.615 | Kurtosis Detects | 2.222 |
| Mean of Logged Detects | 0.513 | SD of Logged Detects | 1.212 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.785 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.196 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0812 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 3.12 | Standard Error of Mean | 0.323 |
| SD | 3.551 | 95% KM (BCA) UCL | 3.696 |
| 95% KM (t) UCL | 3.656 | 95% KM (Percentile Bootstrap) UCL | 3.688 |
| 95% KM (z) UCL | 3.651 | 95% KM Bootstrap t UCL | 3.73 |
| 90% KM Chebyshev UCL | 4.089 | 95% KM Chebyshev UCL | 4.528 |
| 97.5% KM Chebyshev UCL | 5.136 | 99% KM Chebyshev UCL | 6.333 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.734 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.788 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.11 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.0874 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.901 | k star (bias corrected MLE) | 0.884 |
| Theta hat (MLE) | 3.549 | Theta star (bias corrected MLE) | 3.617 |
| nu hat (MLE) | 214.4 | nu star (bias corrected) | 210.4 |
| MLE Mean (bias corrected) | 3.197 | MLE Sd (bias corrected) | 3.401 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.772 | nu hat (KM) | 188.4 |
| Approximate Chi Square Value (188.44, α) | 157.7 | Adjusted Chi Square Value (188.44, β) | 157.3 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 3.729 | 95% Gamma Adjusted KM-UCL (use when n<50) | 3.737 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 3.119 |
| Maximum | 17.1 | Median | 1.5 |
| SD | 3.567 | CV | 1.144 |
| k hat (MLE) | 0.792 | k star (bias corrected MLE) | 0.778 |
| Theta hat (MLE) | 3.935 | Theta star (bias corrected MLE) | 4.006 |
| nu hat (MLE) | 193.4 | nu star (bias corrected) | 189.9 |
| MLE Mean (bias corrected) | 3.119 | MLE Sd (bias corrected) | 3.535 |
| | | Adjusted Level of Significance (β) | 0.048 |
| Approximate Chi Square Value (189.94, α) | 159.1 | Adjusted Chi Square Value (189.94, β) | 158.7 |
| 95% Gamma Approximate UCL (use when n>=50) | 3.724 | 95% Gamma Adjusted UCL (use when n<50) | 3.732 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.0645 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0812 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Approximate Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 3.12 | Mean in Log Scale | 0.439 |
| SD in Original Scale | 3.565 | SD in Log Scale | 1.286 |
| 95% t UCL (assumes normality of ROS data) | 3.655 | 95% Percentile Bootstrap UCL | 3.687 |
| 95% BCA Bootstrap UCL | 3.717 | 95% Bootstrap t UCL | 3.716 |
| 95% H-UCL (Log ROS) | 4.729 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | 0.439 | 95% H-UCL (KM -Log) | 4.689 |

| | | | |
|---|---|---|---|
| KM SD (logged) | 1.281 | 95% Critical H Value (KM-Log) | 2.453 |
| KM Standard Error of Mean (logged) | 0.116 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 3.12 | Mean in Log Scale | 0.424 |
| SD in Original Scale | 3.566 | SD in Log Scale | 1.325 |
| 95% t UCL (Assumes normality) | 3.655 | 95% H-Stat UCL | 4.961 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (Chebyshev) UCL | 4.528 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**CHROMIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 122 | Number of Distinct Observations | 114 |
| | | Number of Missing Observations | 0 |
| Minimum | 3.8 | Mean | 247.1 |
| Maximum | 3430 | Median | 63.25 |
| SD | 490.4 | Std. Error of Mean | 44.4 |
| Coefficient of Variation | 1.985 | Skewness | 3.756 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.524 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 0 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.31 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0802 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
|---|---|---|---|
| 95% Student's-t UCL | 320.7 | 95% Adjusted-CLT UCL (Chen-1995) | 336.2 |
| | | 95% Modified-t UCL (Johnson-1978) | 323.2 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 6.666 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.812 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.185 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.0882 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.571 | k star (bias corrected MLE) | 0.562 |
| Theta hat (MLE) | 433 | Theta star (bias corrected MLE) | 439.6 |
| nu hat (MLE) | 139.2 | nu star (bias corrected) | 137.1 |
| MLE Mean (bias corrected) | 247.1 | MLE Sd (bias corrected) | 329.6 |
| | | Approximate Chi Square Value (0.05) | 111.1 |
| Adjusted Level of Significance | 0.048 | Adjusted Chi Square Value | 110.8 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 305 | 95% Adjusted Gamma UCL (use when n<50) | 305.8 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.96 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 0.00835 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.0903 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.0802 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 1.335 | Mean of logged Data | 4.419 |
| Maximum of Logged Data | 8.14 | SD of logged Data | 1.403 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 308.3 | 90% Chebyshev (MVUE) UCL | 331.5 |
| 95% Chebyshev (MVUE) UCL | 382.8 | 97.5% Chebyshev (MVUE) UCL | 453.8 |
| 99% Chebyshev (MVUE) UCL | 593.5 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 320.1 | 95% Jackknife UCL | 320.7 |
| 95% Standard Bootstrap UCL | 320.8 | 95% Bootstrap-t UCL | 348.6 |
| 95% Hall's Bootstrap UCL | 352.3 | 95% Percentile Bootstrap UCL | 320.5 |
| 95% BCA Bootstrap UCL | 346.6 | | |
| 90% Chebyshev(Mean, Sd) UCL | 380.3 | 95% Chebyshev(Mean, Sd) UCL | 440.6 |
| 97.5% Chebyshev(Mean, Sd) UCL | 524.4 | 99% Chebyshev(Mean, Sd) UCL | 688.9 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 440.6 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

## COBALT

### General Statistics

| | | | |
|---|---|---|---|
| Total Number of Observations | 122 | Number of Distinct Observations | 76 |
| Number of Detects | 115 | Number of Non-Detects | 7 |
| Number of Distinct Detects | 74 | Number of Distinct Non-Detects | 7 |
| Minimum Detect | 0.565 | Minimum Non-Detect | 0.81 |
| Maximum Detect | 13.5 | Maximum Non-Detect | 2.1 |
| Variance Detects | 9.251 | Percent Non-Detects | 5.74% |
| Mean Detects | 3.944 | SD Detects | 3.042 |
| Median Detects | 2.9 | CV Detects | 0.771 |
| Skewness Detects | 1.129 | Kurtosis Detects | 0.534 |
| Mean of Logged Detects | 1.077 | SD of Logged Detects | 0.789 |

### Normal GOF Test on Detects Only

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.855 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.175 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0826 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

### Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

| | | | |
|---|---|---|---|
| Mean | 3.771 | Standard Error of Mean | 0.275 |
| SD | 3.023 | 95% KM (BCA) UCL | 4.218 |
| 95% KM (t) UCL | 4.227 | 95% KM (Percentile Bootstrap) UCL | 4.209 |
| 95% KM (z) UCL | 4.224 | 95% KM Bootstrap t UCL | 4.304 |
| 90% KM Chebyshev UCL | 4.596 | 95% KM Chebyshev UCL | 4.97 |
| 97.5% KM Chebyshev UCL | 5.488 | 99% KM Chebyshev UCL | 6.507 |

### Gamma GOF Tests on Detected Observations Only

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.574 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.767 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.0862 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.0869 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data follow Appr. Gamma Distribution at 5% Significance Level

### Gamma Statistics on Detected Data Only

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.843 | k star (bias corrected MLE) | 1.801 |
| Theta hat (MLE) | 2.14 | Theta star (bias corrected MLE) | 2.19 |
| nu hat (MLE) | 423.9 | nu star (bias corrected) | 414.2 |
| MLE Mean (bias corrected) | 3.944 | MLE Sd (bias corrected) | 2.939 |

### Gamma Kaplan-Meier (KM) Statistics

| | | | |
|---|---|---|---|
| k hat (KM) | 1.557 | nu hat (KM) | 379.8 |
| Approximate Chi Square Value (379.81, α) | 335.6 | Adjusted Chi Square Value (379.81, β) | 335.1 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 4.268 | 95% Gamma Adjusted KM-UCL (use when n<50) | 4.274 |

### Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.0174 | Mean | 3.749 |
| Maximum | 13.5 | Median | 2.6 |
| SD | 3.058 | CV | 0.816 |
| k hat (MLE) | 1.501 | k star (bias corrected MLE) | 1.469 |
| Theta hat (MLE) | 2.498 | Theta star (bias corrected MLE) | 2.551 |
| nu hat (MLE) | 366.2 | nu star (bias corrected) | 358.5 |
| MLE Mean (bias corrected) | 3.749 | MLE Sd (bias corrected) | 3.093 |
| | | Adjusted Level of Significance (β) | 0.048 |
| Approximate Chi Square Value (358.51, α) | 315.6 | Adjusted Chi Square Value (358.51, β) | 315.2 |
| 95% Gamma Approximate UCL (use when n>=50) | 4.258 | 95% Gamma Adjusted UCL (use when n<50) | 4.264 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.0867 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0826 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 3.772 | Mean in Log Scale | 1.01 |
| SD in Original Scale | 3.035 | SD in Log Scale | 0.815 |
| 95% t UCL (assumes normality of ROS data) | 4.227 | 95% Percentile Bootstrap UCL | 4.234 |
| 95% BCA Bootstrap UCL | 4.26 | 95% Bootstrap t UCL | 4.262 |
| 95% H-UCL (Log ROS) | 4.45 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 3.756 | Mean in Log Scale | 0.989 |
| SD in Original Scale | 3.05 | SD in Log Scale | 0.848 |
| 95% t UCL (Assumes normality) | 4.214 | 95% H-Stat UCL | 4.514 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (Chebyshev) UCL | 4.97 | 95% GROS Approximate Gamma UCL | 4.258 |
| 95% Approximate Gamma KM-UCL | 4.268 | | |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 118 | Number of Distinct Observations | 110 |
| | | Number of Missing Observations | 4 |
| Minimum | 1.9 | Mean | 110.8 |
| Maximum | 1400 | Median | 35.95 |
| SD | 191.8 | Std. Error of Mean | 17.66 |
| Coefficient of Variation | 1.73 | Skewness | 3.787 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.583 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 0 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.285 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0816 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 140.1 | 95% Adjusted-CLT UCL (Chen-1995) | 146.4 |
| | | 95% Modified-t UCL (Johnson-1978) | 141.1 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 3.443 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.806 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.133 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.0889 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.635 | k star (bias corrected MLE) | 0.624 |
| Theta hat (MLE) | 174.6 | Theta star (bias corrected MLE) | 177.6 |
| nu hat (MLE) | 149.8 | nu star (bias corrected) | 147.3 |
| MLE Mean (bias corrected) | 110.8 | MLE Sd (bias corrected) | 140.3 |
| | | Approximate Chi Square Value (0.05) | 120.3 |
| Adjusted Level of Significance | 0.048 | Adjusted Chi Square Value | 120 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 135.8 | 95% Adjusted Gamma UCL (use when n<50) | 136.1 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.972 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 0.132 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.0756 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.0816 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 0.642 | Mean of logged Data | 3.742 |
| Maximum of Logged Data | 7.244 | SD of logged Data | 1.405 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 159.4 | 90% Chebyshev (MVUE) UCL | 170 |
| 95% Chebyshev (MVUE) UCL | 196.6 | 97.5% Chebyshev (MVUE) UCL | 233.5 |
| 99% Chebyshev (MVUE) UCL | 306 | | |

**Nonparametric Distribution Free UCL Statistics**

**Data appear to follow a Discernible Distribution at 5% Significance Level**

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 139.9 | 95% Jackknife UCL | 140.1 |
| 95% Standard Bootstrap UCL | 140 | 95% Bootstrap-t UCL | 148.7 |
| 95% Hall's Bootstrap UCL | 154.9 | 95% Percentile Bootstrap UCL | 142.2 |
| 95% BCA Bootstrap UCL | 146.6 | | |
| 90% Chebyshev(Mean, Sd) UCL | 163.8 | 95% Chebyshev(Mean, Sd) UCL | 187.8 |
| 97.5% Chebyshev(Mean, Sd) UCL | 221.1 | 99% Chebyshev(Mean, Sd) UCL | 286.5 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% H-UCL | 159.4 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**ProUCL computes and outputs H-statistic based UCLs for historical reasons only.**
**H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.**
**It is therefore recommended to avoid the use of H-statistic based 95% UCLs.**
**Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.**

**CYANIDE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 122 | Number of Distinct Observations | 83 |
| Number of Detects | 79 | Number of Non-Detects | 43 |
| Number of Distinct Detects | 64 | Number of Distinct Non-Detects | 28 |
| Minimum Detect | 0.69 | Minimum Non-Detect | 0.48 |
| Maximum Detect | 360 | Maximum Non-Detect | 4.1 |
| Variance Detects | 4128 | Percent Non-Detects | 35.25% |
| Mean Detects | 27.42 | SD Detects | 64.25 |
| Median Detects | 4.3 | CV Detects | 2.343 |
| Skewness Detects | 3.538 | Kurtosis Detects | 12.75 |
| Mean of Logged Detects | 1.904 | SD of Logged Detects | 1.519 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.457 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.343 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0997 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 17.99 | Standard Error of Mean | 4.823 |
| SD | 52.94 | 95% KM (BCA) UCL | 26.79 |
| 95% KM (t) UCL | 25.98 | 95% KM (Percentile Bootstrap) UCL | 26.33 |
| 95% KM (z) UCL | 25.92 | 95% KM Bootstrap t UCL | 30.49 |
| 90% KM Chebyshev UCL | 32.46 | 95% KM Chebyshev UCL | 39.01 |
| 97.5% KM Chebyshev UCL | 48.11 | 99% KM Chebyshev UCL | 65.98 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 6.695 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.829 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.223 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.107 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.458 | k star (bias corrected MLE) | 0.449 |
| Theta hat (MLE) | 59.92 | Theta star (bias corrected MLE) | 61.12 |
| nu hat (MLE) | 72.29 | nu star (bias corrected) | 70.88 |
| MLE Mean (bias corrected) | 27.42 | MLE Sd (bias corrected) | 40.94 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.115 | nu hat (KM) | 28.17 |
| Approximate Chi Square Value (28.17, α) | 17.06 | Adjusted Chi Square Value (28.17, β) | 16.96 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 29.7 | 95% Gamma Adjusted KM-UCL (use when n<50) | 29.88 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 17.76 |
| Maximum | 360 | Median | 2.2 |
| SD | 53.23 | CV | 2.998 |
| k hat (MLE) | 0.222 | k star (bias corrected MLE) | 0.222 |
| Theta hat (MLE) | 80.13 | Theta star (bias corrected MLE) | 80.12 |
| nu hat (MLE) | 54.08 | nu star (bias corrected) | 54.08 |
| MLE Mean (bias corrected) | 17.76 | MLE Sd (bias corrected) | 37.72 |
| | | Adjusted Level of Significance (β) | 0.048 |
| Approximate Chi Square Value (54.08, α) | 38.18 | Adjusted Chi Square Value (54.08, β) | 38.02 |
| 95% Gamma Approximate UCL (use when n>=50) | 25.15 | 95% Gamma Adjusted UCL (use when n<50) | 25.26 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.128 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0997 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 17.87 | Mean in Log Scale | 0.769 |
| SD in Original Scale | 53.19 | SD in Log Scale | 2.006 |
| 95% t UCL (assumes normality of ROS data) | 25.85 | 95% Percentile Bootstrap UCL | 26.34 |
| 95% BCA Bootstrap UCL | 28.44 | 95% Bootstrap t UCL | 29.25 |
| 95% H-UCL (Log ROS) | 29.21 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 18 | Mean in Log Scale | 1.054 |
| SD in Original Scale | 53.15 | SD in Log Scale | 1.71 |
| 95% t UCL (Assumes normality) | 25.98 | 95% H-Stat UCL | 19.48 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 97.5% KM (Chebyshev) UCL | 48.11 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**IRON**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 122 | Number of Distinct Observations | 115 |
| | | Number of Missing Observations | 0 |
| Minimum | 1500 | Mean | 13108 |
| Maximum | 46200 | Median | 8395 |
| SD | 10169 | Std. Error of Mean | 920.6 |
| Coefficient of Variation | 0.776 | Skewness | 1.095 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.854 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 0 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.201 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0802 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
|---|---|---|---|
| 95% Student's-t UCL | 14634 | 95% Adjusted-CLT UCL (Chen-1995) | 14719 |
| | | 95% Modified-t UCL (Johnson-1978) | 14649 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.652 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.767 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.135 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.0851 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.797 | k star (bias corrected MLE) | 1.758 |
| Theta hat (MLE) | 7294 | Theta star (bias corrected MLE) | 7455 |
| nu hat (MLE) | 438.5 | nu star (bias corrected) | 429 |
| MLE Mean (bias corrected) | 13108 | MLE Sd (bias corrected) | 9885 |
| | | Approximate Chi Square Value (0.05) | 382 |
| Adjusted Level of Significance | 0.048 | Adjusted Chi Square Value | 381.5 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 14721 | 95% Adjusted Gamma UCL (use when n<50) | 14741 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.945 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 1.30E-04 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.106 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.0802 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 7.313 | Mean of logged Data | 9.178 |
| Maximum of Logged Data | 10.74 | SD of logged Data | 0.8 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 15445 | 90% Chebyshev (MVUE) UCL | 16570 |
| 95% Chebyshev (MVUE) UCL | 18058 | 97.5% Chebyshev (MVUE) UCL | 20122 |
| 99% Chebyshev (MVUE) UCL | 24177 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 14622 | 95% Jackknife UCL | 14634 |
| 95% Standard Bootstrap UCL | 14594 | 95% Bootstrap-t UCL | 14738 |
| 95% Hall's Bootstrap UCL | 14721 | 95% Percentile Bootstrap UCL | 14603 |
| 95% BCA Bootstrap UCL | 14661 | | |
| 90% Chebyshev(Mean, Sd) UCL | 15870 | 95% Chebyshev(Mean, Sd) UCL | 17121 |
| 97.5% Chebyshev(Mean, Sd) UCL | 18857 | 99% Chebyshev(Mean, Sd) UCL | 22268 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 17121 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**LEAD**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 122 | Number of Distinct Observations | 117 |
| | | Number of Missing Observations | 0 |
| Minimum | 12.9 | Mean | 2860 |
| Maximum | 39200 | Median | 669 |
| SD | 6073 | Std. Error of Mean | 549.9 |
| Coefficient of Variation | 2.124 | Skewness | 3.563 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.51 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 0 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.32 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0802 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 3771 | 95% Adjusted-CLT UCL (Chen-1995) | 3954 |
| | | 95% Modified-t UCL (Johnson-1978) | 3801 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 5.43 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.829 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.163 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.0891 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.46 | k star (bias corrected MLE) | 0.454 |
| Theta hat (MLE) | 6222 | Theta star (bias corrected MLE) | 6302 |
| nu hat (MLE) | 112.2 | nu star (bias corrected) | 110.7 |
| MLE Mean (bias corrected) | 2860 | MLE Sd (bias corrected) | 4245 |
| | | Approximate Chi Square Value (0.05) | 87.44 |
| Adjusted Level of Significance | 0.048 | Adjusted Chi Square Value | 87.19 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 3622 | 95% Adjusted Gamma UCL (use when n<50) | 3632 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.974 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 0.192 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.0585 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.0802 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 2.557 | Mean of logged Data | 6.558 |
| Maximum of Logged Data | 10.58 | SD of logged Data | 1.69 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 4589 | 90% Chebyshev (MVUE) UCL | 4802 |
| 95% Chebyshev (MVUE) UCL | 5681 | 97.5% Chebyshev (MVUE) UCL | 6901 |
| 99% Chebyshev (MVUE) UCL | 9296 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 3764 | 95% Jackknife UCL | 3771 |
| 95% Standard Bootstrap UCL | 3744 | 95% Bootstrap-t UCL | 4140 |
| 95% Hall's Bootstrap UCL | 4106 | 95% Percentile Bootstrap UCL | 3766 |
| 95% BCA Bootstrap UCL | 3878 | | |
| 90% Chebyshev(Mean, Sd) UCL | 4510 | 95% Chebyshev(Mean, Sd) UCL | 5257 |
| 97.5% Chebyshev(Mean, Sd) UCL | 6294 | 99% Chebyshev(Mean, Sd) UCL | 8331 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% H-UCL | 4589 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

ProUCL computes and outputs H-statistic based UCLs for historical reasons only.
H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.
It is therefore recommended to avoid the use of H-statistic based 95% UCLs.
Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.

**MANGANESE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 122 | Number of Distinct Observations | 113 |
| | | Number of Missing Observations | 0 |
| Minimum | 7.6 | Mean | 72.36 |
| Maximum | 323 | Median | 56.3 |

| | | | |
|---|---|---|---|
| SD | 59.66 | Std. Error of Mean | 5.401 |
| Coefficient of Variation | 0.824 | Skewness | 1.65 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.839 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 0 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.17 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0802 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 81.31 | 95% Adjusted-CLT UCL (Chen-1995) | 82.1 |
| | | 95% Modified-t UCL (Johnson-1978) | 81.45 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.745 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.768 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.0701 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.0851 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.721 | k star (bias corrected MLE) | 1.684 |
| Theta hat (MLE) | 42.04 | Theta star (bias corrected MLE) | 42.96 |
| nu hat (MLE) | 420 | nu star (bias corrected) | 411 |
| MLE Mean (bias corrected) | 72.36 | MLE Sd (bias corrected) | 55.75 |
| | | Approximate Chi Square Value (0.05) | 365 |
| Adjusted Level of Significance | 0.048 | Adjusted Chi Square Value | 364.5 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50) | 81.48 | 95% Adjusted Gamma UCL (use when n<50) | 81.59 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.974 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 0.194 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.0532 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.0802 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 2.028 | Mean of logged Data | 3.964 |
| Maximum of Logged Data | 5.778 | SD of logged Data | 0.827 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 86.41 | 90% Chebyshev (MVUE) UCL | 92.83 |
| 95% Chebyshev (MVUE) UCL | 101.4 | 97.5% Chebyshev (MVUE) UCL | 113.4 |
| 99% Chebyshev (MVUE) UCL | 136.8 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 81.24 | 95% Jackknife UCL | 81.31 |
| 95% Standard Bootstrap UCL | 81.04 | 95% Bootstrap-t UCL | 82 |
| 95% Hall's Bootstrap UCL | 82.29 | 95% Percentile Bootstrap UCL | 81.32 |
| 95% BCA Bootstrap UCL | 82.65 | | |
| 90% Chebyshev(Mean, Sd) UCL | 88.56 | 95% Chebyshev(Mean, Sd) UCL | 95.9 |
| 97.5% Chebyshev(Mean, Sd) UCL | 106.1 | 99% Chebyshev(Mean, Sd) UCL | 126.1 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Approximate Gamma UCL | 81.48 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**NICKEL**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 122 | Number of Distinct Observations | 95 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.935 | Mean | 13.76 |
| Maximum | 549 | Median | 5.85 |
| SD | 49.66 | Std. Error of Mean | 4.496 |
| Coefficient of Variation | 3.608 | Skewness | 10.52 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.2 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 0 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.398 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0802 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
|---|---|---|---|
| 95% Student's-t UCL | 21.21 | 95% Adjusted-CLT UCL (Chen-1995) | 25.73 |
| | | 95% Modified-t UCL (Johnson-1978) | 21.93 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 5.865 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.794 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.133 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.087 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.769 | k star (bias corrected MLE) | 0.755 |
| Theta hat (MLE) | 17.91 | Theta star (bias corrected MLE) | 18.22 |
| nu hat (MLE) | 187.5 | nu star (bias corrected) | 184.3 |
| MLE Mean (bias corrected) | 13.76 | MLE Sd (bias corrected) | 15.84 |
| | | Approximate Chi Square Value (0.05) | 153.9 |
| Adjusted Level of Significance | 0.048 | Adjusted Chi Square Value | 153.5 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 16.48 | 95% Adjusted Gamma UCL (use when n<50) | 16.52 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.96 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 0.00831 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.0877 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.0802 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -0.0672 | Mean of logged Data | 1.846 |
| Maximum of Logged Data | 6.308 | SD of logged Data | 1.023 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 13.12 | 90% Chebyshev (MVUE) UCL | 14.19 |
| 95% Chebyshev (MVUE) UCL | 15.81 | 97.5% Chebyshev (MVUE) UCL | 18.06 |
| 99% Chebyshev (MVUE) UCL | 22.48 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 21.16 | 95% Jackknife UCL | 21.21 |
| 95% Standard Bootstrap UCL | 21.28 | 95% Bootstrap-t UCL | 46.16 |
| 95% Hall's Bootstrap UCL | 50.33 | 95% Percentile Bootstrap UCL | 22.31 |
| 95% BCA Bootstrap UCL | 27.77 | | |
| 90% Chebyshev(Mean, Sd) UCL | 27.25 | 95% Chebyshev(Mean, Sd) UCL | 33.36 |
| 97.5% Chebyshev(Mean, Sd) UCL | 41.84 | 99% Chebyshev(Mean, Sd) UCL | 58.49 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 33.36 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

## THALLIUM

### General Statistics

| | | | |
|---|---|---|---|
| Total Number of Observations | 122 | Number of Distinct Observations | 65 |
| Number of Detects | 8 | Number of Non-Detects | 114 |
| Number of Distinct Detects | 8 | Number of Distinct Non-Detects | 61 |
| Minimum Detect | 3.1 | Minimum Non-Detect | 0.98 |
| Maximum Detect | 9.9 | Maximum Non-Detect | 15.6 |
| Variance Detects | 3.565 | Percent Non-Detects | 93.44% |
| Mean Detects | 6.547 | SD Detects | 1.888 |
| Median Detects | 6.65 | CV Detects | 0.288 |
| Skewness Detects | -0.104 | Kurtosis Detects | 2.346 |
| Mean of Logged Detects | 1.836 | SD of Logged Detects | 0.33 |

### Normal GOF Test on Detects Only

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.923 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.818 | Detected Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.24 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.313 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Normal at 5% Significance Level

### Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

| | | | |
|---|---|---|---|
| Mean | 1.391 | Standard Error of Mean | 0.154 |
| SD | 1.51 | 95% KM (BCA) UCL | 1.696 |
| 95% KM (t) UCL | 1.646 | 95% KM (Percentile Bootstrap) UCL | 1.664 |
| 95% KM (z) UCL | 1.644 | 95% KM Bootstrap t UCL | 1.613 |
| 90% KM Chebyshev UCL | 1.853 | 95% KM Chebyshev UCL | 2.062 |
| 97.5% KM Chebyshev UCL | 2.352 | 99% KM Chebyshev UCL | 2.922 |

### Gamma GOF Tests on Detected Observations Only

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.531 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.715 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.21 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.294 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

### Gamma Statistics on Detected Data Only

| | | | |
|---|---|---|---|
| k hat (MLE) | 11.87 | k star (bias corrected MLE) | 7.5 |
| Theta hat (MLE) | 0.552 | Theta star (bias corrected MLE) | 0.873 |
| nu hat (MLE) | 189.9 | nu star (bias corrected) | 120 |
| MLE Mean (bias corrected) | 6.547 | MLE Sd (bias corrected) | 2.391 |

### Gamma Kaplan-Meier (KM) Statistics

| | | | |
|---|---|---|---|
| k hat (KM) | 0.849 | nu hat (KM) | 207.1 |
| Approximate Chi Square Value (207.07, α) | 174.8 | Adjusted Chi Square Value (207.07, β) | 174.4 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 1.648 | 95% Gamma Adjusted KM-UCL (use when n<50) | 1.652 |

### Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 0.646 |
| Maximum | 9.9 | Median | 0.01 |
| SD | 1.695 | CV | 2.626 |
| k hat (MLE) | 0.26 | k star (bias corrected MLE) | 0.259 |
| Theta hat (MLE) | 2.481 | Theta star (bias corrected MLE) | 2.489 |
| nu hat (MLE) | 63.5 | nu star (bias corrected) | 63.28 |
| MLE Mean (bias corrected) | 0.646 | MLE Sd (bias corrected) | 1.268 |
| | | Adjusted Level of Significance (β) | 0.048 |
| Approximate Chi Square Value (63.28, α) | 45.98 | Adjusted Chi Square Value (63.28, β) | 45.8 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.888 | 95% Gamma Adjusted UCL (use when n<50) | 0.892 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.861 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.818 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.24 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.313 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 1.909 | Mean in Log Scale | 0.506 |
| SD in Original Scale | 1.395 | SD in Log Scale | 0.471 |
| 95% t UCL (assumes normality of ROS data) | 2.119 | 95% Percentile Bootstrap UCL | 2.121 |
| 95% BCA Bootstrap UCL | 2.163 | 95% Bootstrap t UCL | 2.167 |
| 95% H-UCL (Log ROS) | 2.003 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | 0.12 | 95% H-UCL (KM -Log) | 1.381 |
| KM SD (logged) | 0.492 | 95% Critical H Value (KM-Log) | 1.818 |
| KM Standard Error of Mean (logged) | 0.0512 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 2.094 | Mean in Log Scale | 0.484 |
| SD in Original Scale | 1.731 | SD in Log Scale | 0.689 |
| 95% t UCL (Assumes normality) | 2.354 | 95% H-Stat UCL | 2.324 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 1.646 | 95% KM (Percentile Bootstrap) UCL | 1.664 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

## VANADIUM

### General Statistics

| | | | |
|---|---|---|---|
| Total Number of Observations | 122 | Number of Distinct Observations | 104 |
| | | Number of Missing Observations | 0 |
| Minimum | 2.6 | Mean | 18.31 |
| Maximum | 81.2 | Median | 13.05 |
| SD | 15.23 | Std. Error of Mean | 1.379 |
| Coefficient of Variation | 0.832 | Skewness | 1.635 |

### Normal GOF Test

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.824 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 0 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.183 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0802 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

### Assuming Normal Distribution

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 20.59 | 95% Adjusted-CLT UCL (Chen-1995) | 20.79 |
| | | 95% Modified-t UCL (Johnson-1978) | 20.63 |

### Gamma GOF Test

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.897 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.768 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.112 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.0851 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

### Gamma Statistics

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.765 | k star (bias corrected MLE) | 1.728 |
| Theta hat (MLE) | 10.37 | Theta star (bias corrected MLE) | 10.6 |
| nu hat (MLE) | 430.8 | nu star (bias corrected) | 421.5 |
| MLE Mean (bias corrected) | 18.31 | MLE Sd (bias corrected) | 13.93 |
| | | Approximate Chi Square Value (0.05) | 374.9 |
| Adjusted Level of Significance | 0.048 | Adjusted Chi Square Value | 374.4 |

### Assuming Gamma Distribution

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 20.58 | 95% Adjusted Gamma UCL (use when n<50) | 20.61 |

### Lognormal GOF Test

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.961 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 0.0105 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.0852 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.0802 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 0.956 | Mean of logged Data | 2.598 |
| Maximum of Logged Data | 4.397 | SD of logged Data | 0.793 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 21.28 | 90% Chebyshev (MVUE) UCL | 22.82 |
| 95% Chebyshev (MVUE) UCL | 24.85 | 97.5% Chebyshev (MVUE) UCL | 27.67 |
| 99% Chebyshev (MVUE) UCL | 33.2 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 20.57 | 95% Jackknife UCL | 20.59 |
| 95% Standard Bootstrap UCL | 20.53 | 95% Bootstrap-t UCL | 20.75 |
| 95% Hall's Bootstrap UCL | 20.79 | 95% Percentile Bootstrap UCL | 20.56 |
| 95% BCA Bootstrap UCL | 20.71 | | |
| 90% Chebyshev(Mean, Sd) UCL | 22.44 | 95% Chebyshev(Mean, Sd) UCL | 24.32 |
| 97.5% Chebyshev(Mean, Sd) UCL | 26.92 | 99% Chebyshev(Mean, Sd) UCL | 32.03 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 24.32 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**ZINC**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 106 | Number of Distinct Observations | 102 |
| | | Number of Missing Observations | 16 |
| Minimum | 4.45 | Mean | 323.6 |
| Maximum | 2770 | Median | 127 |
| SD | 441.8 | Std. Error of Mean | 42.91 |
| Coefficient of Variation | 1.365 | Skewness | 2.771 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.679 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 0 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.239 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0861 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
|---|---|---|---|
| 95% Student's-t UCL | 394.9 | 95% Adjusted-CLT UCL (Chen-1995) | 406.6 |
| | | 95% Modified-t UCL (Johnson-1978) | 396.8 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.571 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.791 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.147 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.0911 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.833 | k star (bias corrected MLE) | 0.816 |
| Theta hat (MLE) | 388.3 | Theta star (bias corrected MLE) | 396.6 |
| nu hat (MLE) | 176.7 | nu star (bias corrected) | 173 |
| MLE Mean (bias corrected) | 323.6 | MLE Sd (bias corrected) | 358.2 |
| | | Approximate Chi Square Value (0.05) | 143.6 |
| Adjusted Level of Significance | 0.0477 | Adjusted Chi Square Value | 143.2 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 389.9 | 95% Adjusted Gamma UCL (use when n<50) | 390.9 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.981 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 0.546 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.083 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.0861 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 1.493 | Mean of logged Data | 5.071 |
| Maximum of Logged Data | 7.927 | SD of logged Data | 1.224 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 450.7 | 90% Chebyshev (MVUE) UCL | 485.6 |
| 95% Chebyshev (MVUE) UCL | 554.7 | 97.5% Chebyshev (MVUE) UCL | 650.6 |
| 99% Chebyshev (MVUE) UCL | 838.8 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 394.2 | 95% Jackknife UCL | 394.9 |
| 95% Standard Bootstrap UCL | 394.4 | 95% Bootstrap-t UCL | 409.1 |
| 95% Hall's Bootstrap UCL | 408.7 | 95% Percentile Bootstrap UCL | 392.4 |
| 95% BCA Bootstrap UCL | 405.4 | | |
| 90% Chebyshev(Mean, Sd) UCL | 452.4 | 95% Chebyshev(Mean, Sd) UCL | 510.7 |
| 97.5% Chebyshev(Mean, Sd) UCL | 591.6 | 99% Chebyshev(Mean, Sd) UCL | 750.6 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% H-UCL | 450.7 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**ProUCL computes and outputs H-statistic based UCLs for historical reasons only.**
**H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.**
**It is therefore recommended to avoid the use of H-statistic based 95% UCLs.**
**Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.**

**AROCLOR-1254**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 122 | Number of Distinct Observations | 75 |
| Number of Detects | 42 | Number of Non-Detects | 80 |
| Number of Distinct Detects | 31 | Number of Distinct Non-Detects | 54 |
| Minimum Detect | 0.0215 | Minimum Non-Detect | 0.02 |
| Maximum Detect | 1.3 | Maximum Non-Detect | 0.21 |
| Variance Detects | 0.0688 | Percent Non-Detects | 65.57% |
| Mean Detects | 0.26 | SD Detects | 0.262 |
| Median Detects | 0.175 | CV Detects | 1.007 |
| Skewness Detects | 2.05 | Kurtosis Detects | 5.037 |
| Mean of Logged Detects | -1.785 | SD of Logged Detects | 0.985 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.751 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.942 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.23 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.137 | Detected Data Not Normal at 5% Significance Level | |

**Detected Data Not Normal at 5% Significance Level**

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.106 | Standard Error of Mean | 0.0174 |
| SD | 0.189 | 95% KM (BCA) UCL | 0.139 |
| 95% KM (t) UCL | 0.135 | 95% KM (Percentile Bootstrap) UCL | 0.137 |
| 95% KM (z) UCL | 0.135 | 95% KM Bootstrap t UCL | 0.146 |
| 90% KM Chebyshev UCL | 0.158 | 95% KM Chebyshev UCL | 0.182 |
| 97.5% KM Chebyshev UCL | 0.215 | 99% KM Chebyshev UCL | 0.279 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.593 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.772 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.114 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.14 | Detected data appear Gamma Distributed at 5% Significance Level | |

**Detected data appear Gamma Distributed at 5% Significance Level**

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.28 | k star (bias corrected MLE) | 1.204 |
| Theta hat (MLE) | 0.204 | Theta star (bias corrected MLE) | 0.216 |
| nu hat (MLE) | 107.5 | nu star (bias corrected) | 101.1 |
| MLE Mean (bias corrected) | 0.26 | MLE Sd (bias corrected) | 0.237 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.315 | nu hat (KM) | 76.84 |
| Approximate Chi Square Value (76.84, α) | 57.65 | Adjusted Chi Square Value (76.84, β) | 57.45 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.141 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.142 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 0.0962 |
| Maximum | 1.3 | Median | 0.01 |
| SD | 0.194 | CV | 2.015 |
| k hat (MLE) | 0.492 | k star (bias corrected MLE) | 0.486 |
| Theta hat (MLE) | 0.195 | Theta star (bias corrected MLE) | 0.198 |
| nu hat (MLE) | 120.2 | nu star (bias corrected) | 118.5 |
| MLE Mean (bias corrected) | 0.0962 | MLE Sd (bias corrected) | 0.138 |
| | | Adjusted Level of Significance (β) | 0.048 |
| Approximate Chi Square Value (118.53, α) | 94.4 | Adjusted Chi Square Value (118.53, β) | 94.14 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.121 | 95% Gamma Adjusted UCL (use when n<50) | 0.121 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.933 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.942 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.105 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.137 | Detected Data appear Lognormal at 5% Significance Level | |

**Detected Data appear Approximate Lognormal at 5% Significance Level**

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.1 | Mean in Log Scale | -3.409 |
| SD in Original Scale | 0.192 | SD in Log Scale | 1.38 |
| 95% t UCL (assumes normality of ROS data) | 0.129 | 95% Percentile Bootstrap UCL | 0.132 |
| 95% BCA Bootstrap UCL | 0.139 | 95% Bootstrap t UCL | 0.137 |
| 95% H-UCL (Log ROS) | 0.118 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -3.076 | 95% H-UCL (KM -Log) | 0.11 |
| KM SD (logged) | 1.124 | 95% Critical H Value (KM-Log) | 2.3 |
| KM Standard Error of Mean (logged) | 0.109 | | |

**DL/2 Statistics**

| DL/2 Normal | | DL/2 Log-Transformed | |
|---|---|---|---|
| Mean in Original Scale | 0.112 | Mean in Log Scale | -2.932 |
| SD in Original Scale | 0.188 | SD in Log Scale | 1.111 |
| 95% t UCL (Assumes normality) | 0.14 | 95% H-Stat UCL | 0.124 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Gamma Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.135 | 95% GROS Approximate Gamma UCL | 0.121 |
| 95% Approximate Gamma KM-UCL | 0.141 | | |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**AROCLOR-1260**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 122 | Number of Distinct Observations | 76 |
| Number of Detects | 37 | Number of Non-Detects | 85 |
| Number of Distinct Detects | 33 | Number of Distinct Non-Detects | 57 |
| Minimum Detect | 0.027 | Minimum Non-Detect | 0.02 |
| Maximum Detect | 0.29 | Maximum Non-Detect | 0.3 |
| Variance Detects | 0.00321 | Percent Non-Detects | 69.67% |
| Mean Detects | 0.102 | SD Detects | 0.0567 |
| Median Detects | 0.089 | CV Detects | 0.557 |
| Skewness Detects | 1.273 | Kurtosis Detects | 2.129 |
| Mean of Logged Detects | -2.432 | SD of Logged Detects | 0.558 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.911 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.936 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.122 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.146 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Approximate Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.05 | Standard Error of Mean | 0.00474 |
| SD | 0.0487 | 95% KM (BCA) UCL | 0.0572 |
| 95% KM (t) UCL | 0.0578 | 95% KM (Percentile Bootstrap) UCL | 0.0583 |
| 95% KM (z) UCL | 0.0578 | 95% KM Bootstrap t UCL | 0.0588 |
| 90% KM Chebyshev UCL | 0.0642 | 95% KM Chebyshev UCL | 0.0707 |
| 97.5% KM Chebyshev UCL | 0.0796 | 99% KM Chebyshev UCL | 0.0972 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.168 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.753 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.0701 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.146 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 3.587 | k star (bias corrected MLE) | 3.314 |
| Theta hat (MLE) | 0.0284 | Theta star (bias corrected MLE) | 0.0307 |
| nu hat (MLE) | 265.4 | nu star (bias corrected) | 245.3 |
| MLE Mean (bias corrected) | 0.102 | MLE Sd (bias corrected) | 0.0559 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 1.054 | nu hat (KM) | 257.2 |
| Approximate Chi Square Value (257.17, α) | 221 | Adjusted Chi Square Value (257.17, β) | 220.6 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.0581 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.0583 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 0.0397 |
| Maximum | 0.29 | Median | 0.01 |
| SD | 0.0517 | CV | 1.301 |
| k hat (MLE) | 0.954 | k star (bias corrected MLE) | 0.936 |
| Theta hat (MLE) | 0.0416 | Theta star (bias corrected MLE) | 0.0424 |
| nu hat (MLE) | 232.8 | nu star (bias corrected) | 228.4 |
| MLE Mean (bias corrected) | 0.0397 | MLE Sd (bias corrected) | 0.0411 |
| | | Adjusted Level of Significance (β) | 0.048 |
| Approximate Chi Square Value (228.44, α) | 194.5 | Adjusted Chi Square Value (228.44, β) | 194.1 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0467 | 95% Gamma Adjusted UCL (use when n<50) | 0.0468 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.983 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.936 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.0687 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.146 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.0482 | Mean in Log Scale | -3.345 |
| SD in Original Scale | 0.0475 | SD in Log Scale | 0.727 |
| 95% t UCL (assumes normality of ROS data) | 0.0553 | 95% Percentile Bootstrap UCL | 0.0553 |
| 95% BCA Bootstrap UCL | 0.0565 | 95% Bootstrap t UCL | 0.0561 |
| 95% H-UCL (Log ROS) | 0.0523 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -3.324 | 95% H-UCL (KM -Log) | 0.0544 |
| KM SD (logged) | 0.747 | 95% Critical H Value (KM-Log) | 1.981 |
| KM Standard Error of Mean (logged) | 0.0789 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.0564 | Mean in Log Scale | -3.197 |
| SD in Original Scale | 0.049 | SD in Log Scale | 0.805 |
| 95% t UCL (Assumes normality) | 0.0638 | 95% H-Stat UCL | 0.0656 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.0578 | 95% KM (Percentile Bootstrap) UCL | 0.0583 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**BENZO(A)ANTHRACENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 121 | Number of Distinct Observations | 88 |
| | | Number of Missing Observations | 1 |
| Number of Detects | 107 | Number of Non-Detects | 14 |
| Number of Distinct Detects | 77 | Number of Distinct Non-Detects | 12 |
| Minimum Detect | 0.027 | Minimum Non-Detect | 0.46 |
| Maximum Detect | 6 | Maximum Non-Detect | 2.4 |
| Variance Detects | 0.658 | Percent Non-Detects | 11.57% |
| Mean Detects | 0.61 | SD Detects | 0.811 |
| Median Detects | 0.35 | CV Detects | 1.331 |
| Skewness Detects | 3.886 | Kurtosis Detects | 19.75 |
| Mean of Logged Detects | -0.992 | SD of Logged Detects | 0.979 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.603 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.254 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0857 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.58 | Standard Error of Mean | 0.0706 |
| SD | 0.768 | 95% KM (BCA) UCL | 0.711 |
| 95% KM (t) UCL | 0.697 | 95% KM (Percentile Bootstrap) UCL | 0.706 |

| | | | |
|---|---|---|---|
| 95% KM (z) UCL | 0.696 | 95% KM Bootstrap t UCL | 0.739 |
| 90% KM Chebyshev UCL | 0.792 | 95% KM Chebyshev UCL | 0.888 |
| 97.5% KM Chebyshev UCL | 1.021 | 99% KM Chebyshev UCL | 1.283 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.642 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.779 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.118 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.09 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.144 | k star (bias corrected MLE) | 1.118 |
| Theta hat (MLE) | 0.533 | Theta star (bias corrected MLE) | 0.545 |
| nu hat (MLE) | 244.8 | nu star (bias corrected) | 239.3 |
| MLE Mean (bias corrected) | 0.61 | MLE Sd (bias corrected) | 0.577 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.57 | nu hat (KM) | 137.9 |
| Approximate Chi Square Value (137.89, α) | 111.8 | Adjusted Chi Square Value (137.89, β) | 111.5 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.716 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.718 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.027 | Mean | 0.571 |
| Maximum | 6 | Median | 0.316 |
| SD | 0.772 | CV | 1.353 |
| k hat (MLE) | 1.173 | k star (bias corrected MLE) | 1.149 |
| Theta hat (MLE) | 0.486 | Theta star (bias corrected MLE) | 0.496 |
| nu hat (MLE) | 283.9 | nu star (bias corrected) | 278.2 |
| MLE Mean (bias corrected) | 0.571 | MLE Sd (bias corrected) | 0.532 |
| | | Adjusted Level of Significance (β) | 0.048 |
| Approximate Chi Square Value (278.17, α) | 240.5 | Adjusted Chi Square Value (278.17, β) | 240.1 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.66 | 95% Gamma Adjusted UCL (use when n<50) | 0.661 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.0738 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0857 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.574 | Mean in Log Scale | -1.019 |
| SD in Original Scale | 0.769 | SD in Log Scale | 0.928 |
| 95% t UCL (assumes normality of ROS data) | 0.69 | 95% Percentile Bootstrap UCL | 0.699 |
| 95% BCA Bootstrap UCL | 0.721 | 95% Bootstrap t UCL | 0.739 |
| 95% H-UCL (Log ROS) | 0.664 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -1.027 | 95% H-UCL (KM -Log) | 0.684 |
| KM SD (logged) | 0.959 | 95% Critical H Value (KM-Log) | 2.15 |
| KM Standard Error of Mean (logged) | 0.091 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.603 | Mean in Log Scale | -0.958 |
| SD in Original Scale | 0.768 | SD in Log Scale | 0.938 |
| 95% t UCL (Assumes normality) | 0.718 | 95% H-Stat UCL | 0.715 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Lognormal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (BCA) UCL | 0.711 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**BENZO(A)PYRENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 120 | Number of Distinct Observations | 81 |
| | | Number of Missing Observations | 2 |
| Number of Detects | 108 | Number of Non-Detects | 12 |
| Number of Distinct Detects | 74 | Number of Distinct Non-Detects | 10 |
| Minimum Detect | 0.028 | Minimum Non-Detect | 0.46 |
| Maximum Detect | 5 | Maximum Non-Detect | 1.6 |
| Variance Detects | 0.516 | Percent Non-Detects | 10% |
| Mean Detects | 0.605 | SD Detects | 0.718 |
| Median Detects | 0.355 | CV Detects | 1.188 |
| Skewness Detects | 3.492 | Kurtosis Detects | 15.96 |
| Mean of Logged Detects | -0.965 | SD of Logged Detects | 0.983 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.657 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.213 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0853 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.58 | Standard Error of Mean | 0.0634 |
| SD | 0.687 | 95% KM (BCA) UCL | 0.697 |

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.685 | 95% KM (Percentile Bootstrap) UCL | 0.686 |
| 95% KM (z) UCL | 0.685 | 95% KM Bootstrap t UCL | 0.727 |
| 90% KM Chebyshev UCL | 0.77 | 95% KM Chebyshev UCL | 0.857 |
| 97.5% KM Chebyshev UCL | 0.976 | 99% KM Chebyshev UCL | 1.211 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.377 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.777 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.0941 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.0896 | Detected Data Not Gamma Distributed at 5% Significance Level | |

**Detected Data Not Gamma Distributed at 5% Significance Level**

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.221 | k star (bias corrected MLE) | 1.193 |
| Theta hat (MLE) | 0.495 | Theta star (bias corrected MLE) | 0.507 |
| nu hat (MLE) | 263.7 | nu star (bias corrected) | 257.7 |
| MLE Mean (bias corrected) | 0.605 | MLE Sd (bias corrected) | 0.554 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.714 | nu hat (KM) | 171.3 |
| Approximate Chi Square Value (171.33, α) | 142.1 | Adjusted Chi Square Value (171.33, β) | 141.7 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.7 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.701 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.028 | Mean | 0.573 |
| Maximum | 5 | Median | 0.342 |
| SD | 0.689 | CV | 1.203 |
| k hat (MLE) | 1.255 | k star (bias corrected MLE) | 1.229 |
| Theta hat (MLE) | 0.457 | Theta star (bias corrected MLE) | 0.466 |
| nu hat (MLE) | 301.2 | nu star (bias corrected) | 295 |
| MLE Mean (bias corrected) | 0.573 | MLE Sd (bias corrected) | 0.517 |
| | | Adjusted Level of Significance (β) | 0.048 |
| Approximate Chi Square Value (295.00, α) | 256.2 | Adjusted Chi Square Value (295.00, β) | 255.8 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.66 | 95% Gamma Adjusted UCL (use when n<50) | 0.661 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.0638 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0853 | Detected Data appear Lognormal at 5% Significance Level | |

**Detected Data appear Lognormal at 5% Significance Level**

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.575 | Mean in Log Scale | -0.992 |
| SD in Original Scale | 0.688 | SD in Log Scale | 0.94 |
| 95% t UCL (assumes normality of ROS data) | 0.679 | 95% Percentile Bootstrap UCL | 0.686 |

| | | | |
|---|---|---|---|
| 95% BCA Bootstrap UCL | 0.702 | 95% Bootstrap t UCL | 0.713 |
| 95% H-UCL (Log ROS) | 0.695 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -0.998 | 95% H-UCL (KM -Log) | 0.715 |
| KM SD (logged) | 0.968 | 95% Critical H Value (KM-Log) | 2.193 |
| KM Standard Error of Mean (logged) | 0.092 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.595 | Mean in Log Scale | -0.944 |
| SD in Original Scale | 0.684 | SD in Log Scale | 0.943 |
| 95% t UCL (Assumes normality) | 0.699 | 95% H-Stat UCL | 0.732 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Lognormal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (BCA) UCL | 0.697 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**BENZO(B)FLUORANTHENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 120 | Number of Distinct Observations | 85 |
| | | Number of Missing Observations | 2 |
| Number of Detects | 109 | Number of Non-Detects | 11 |
| Number of Distinct Detects | 80 | Number of Distinct Non-Detects | 10 |
| Minimum Detect | 0.03 | Minimum Non-Detect | 0.49 |
| Maximum Detect | 4.6 | Maximum Non-Detect | 2.4 |
| Variance Detects | 0.512 | Percent Non-Detects | 9.17% |
| Mean Detects | 0.696 | SD Detects | 0.716 |
| Median Detects | 0.46 | CV Detects | 1.029 |
| Skewness Detects | 2.611 | Kurtosis Detects | 9.152 |
| Mean of Logged Detects | -0.804 | SD of Logged Detects | 1.006 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.749 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.179 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0849 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.671 | Standard Error of Mean | 0.0637 |
| SD | 0.689 | 95% KM (BCA) UCL | 0.79 |
| 95% KM (t) UCL | 0.777 | 95% KM (Percentile Bootstrap) UCL | 0.778 |
| 95% KM (z) UCL | 0.776 | 95% KM Bootstrap t UCL | 0.799 |
| 90% KM Chebyshev UCL | 0.862 | 95% KM Chebyshev UCL | 0.949 |
| 97.5% KM Chebyshev UCL | 1.069 | 99% KM Chebyshev UCL | 1.306 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.699 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.776 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.0779 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.0892 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.274 | k star (bias corrected MLE) | 1.245 |
| Theta hat (MLE) | 0.546 | Theta star (bias corrected MLE) | 0.559 |
| nu hat (MLE) | 277.8 | nu star (bias corrected) | 271.5 |
| MLE Mean (bias corrected) | 0.696 | MLE Sd (bias corrected) | 0.623 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.948 | nu hat (KM) | 227.6 |
| Approximate Chi Square Value (227.59, α) | 193.7 | Adjusted Chi Square Value (227.59, β) | 193.3 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.789 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.79 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.03 | Mean | 0.665 |
| Maximum | 4.6 | Median | 0.435 |
| SD | 0.69 | CV | 1.037 |
| k hat (MLE) | 1.33 | k star (bias corrected MLE) | 1.302 |
| Theta hat (MLE) | 0.5 | Theta star (bias corrected MLE) | 0.51 |
| nu hat (MLE) | 319.2 | nu star (bias corrected) | 312.6 |
| MLE Mean (bias corrected) | 0.665 | MLE Sd (bias corrected) | 0.583 |
| | | Adjusted Level of Significance (β) | 0.048 |
| Approximate Chi Square Value (312.59, α) | 272.6 | Adjusted Chi Square Value (312.59, β) | 272.2 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.762 | 95% Gamma Adjusted UCL (use when n<50) | 0.764 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.0794 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0849 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.664 | Mean in Log Scale | -0.83 |

| | | | |
|---|---|---|---|
| SD in Original Scale | 0.69 | SD in Log Scale | 0.964 |
| 95% t UCL (assumes normality of ROS data) | 0.768 | 95% Percentile Bootstrap UCL | 0.78 |
| 95% BCA Bootstrap UCL | 0.788 | 95% Bootstrap t UCL | 0.791 |
| 95% H-UCL (Log ROS) | 0.842 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -0.835 | 95% H-UCL (KM -Log) | 0.87 |
| KM SD (logged) | 0.994 | 95% Critical H Value (KM-Log) | 2.217 |
| KM Standard Error of Mean (logged) | 0.0944 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.687 | Mean in Log Scale | -0.785 |
| SD in Original Scale | 0.687 | SD in Log Scale | 0.969 |
| 95% t UCL (Assumes normality) | 0.791 | 95% H-Stat UCL | 0.886 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Gamma Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (Chebyshev) UCL | 0.949 | 95% GROS Approximate Gamma UCL | 0.762 |
| 95% Approximate Gamma KM-UCL | 0.789 | | |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**DIBENZO(A,H)ANTHRACENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 120 | Number of Distinct Observations | 84 |
| | | Number of Missing Observations | 2 |
| Number of Detects | 63 | Number of Non-Detects | 57 |
| Number of Distinct Detects | 46 | Number of Distinct Non-Detects | 39 |
| Minimum Detect | 0.031 | Minimum Non-Detect | 0.39 |
| Maximum Detect | 1.297 | Maximum Non-Detect | 3 |
| Variance Detects | 0.0394 | Percent Non-Detects | 47.50% |
| Mean Detects | 0.169 | SD Detects | 0.198 |
| Median Detects | 0.13 | CV Detects | 1.173 |
| Skewness Detects | 4.274 | Kurtosis Detects | 20.96 |
| Mean of Logged Detects | -2.094 | SD of Logged Detects | 0.731 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.545 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.256 | **Lilliefors GOF Test** | |

| | | | |
|---|---|---|---|
| 5% Lilliefors Critical Value | 0.112 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.158 | Standard Error of Mean | 0.0183 |
| SD | 0.168 | 95% KM (BCA) UCL | 0.192 |
| 95% KM (t) UCL | 0.189 | 95% KM (Percentile Bootstrap) UCL | 0.189 |
| 95% KM (z) UCL | 0.188 | 95% KM Bootstrap t UCL | 0.203 |
| 90% KM Chebyshev UCL | 0.213 | 95% KM Chebyshev UCL | 0.238 |
| 97.5% KM Chebyshev UCL | 0.273 | 99% KM Chebyshev UCL | 0.341 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.71 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.766 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.13 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.114 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.725 | k star (bias corrected MLE) | 1.654 |
| Theta hat (MLE) | 0.0981 | Theta star (bias corrected MLE) | 0.102 |
| nu hat (MLE) | 217.4 | nu star (bias corrected) | 208.4 |
| MLE Mean (bias corrected) | 0.169 | MLE Sd (bias corrected) | 0.132 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.892 | nu hat (KM) | 214.2 |
| Approximate Chi Square Value (214.16, α) | 181.3 | Adjusted Chi Square Value (214.16, β) | 180.9 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.187 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.187 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.015 | Mean | 0.149 |
| Maximum | 1.297 | Median | 0.12 |
| SD | 0.15 | CV | 1.005 |
| k hat (MLE) | 2.314 | k star (bias corrected MLE) | 2.262 |
| Theta hat (MLE) | 0.0645 | Theta star (bias corrected MLE) | 0.066 |
| nu hat (MLE) | 555.4 | nu star (bias corrected) | 542.9 |
| MLE Mean (bias corrected) | 0.149 | MLE Sd (bias corrected) | 0.0992 |
| | | Adjusted Level of Significance (β) | 0.048 |
| Approximate Chi Square Value (542.86, α) | 489.8 | Adjusted Chi Square Value (542.86, β) | 489.2 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.165 | 95% Gamma Adjusted UCL (use when n<50) | 0.166 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.0709 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.112 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.147 | Mean in Log Scale | -2.11 |
| SD in Original Scale | 0.147 | SD in Log Scale | 0.56 |
| 95% t UCL (assumes normality of ROS data) | 0.17 | 95% Percentile Bootstrap UCL | 0.172 |
| 95% BCA Bootstrap UCL | 0.181 | 95% Bootstrap t UCL | 0.192 |
| 95% H-UCL (Log ROS) | 0.156 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -2.119 | 95% H-UCL (KM -Log) | 0.173 |
| KM SD (logged) | 0.69 | 95% Critical H Value (KM-Log) | 1.965 |
| KM Standard Error of Mean (logged) | 0.0845 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.366 | Mean in Log Scale | -1.413 |
| SD in Original Scale | 0.322 | SD in Log Scale | 0.957 |
| 95% t UCL (Assumes normality) | 0.415 | 95% H-Stat UCL | 0.466 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Lognormal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.189 | 95% KM (% Bootstrap) UCL | 0.189 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**INDENO(1,2,3-CD)PYRENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 120 | Number of Distinct Observations | 72 |
| | | Number of Missing Observations | 2 |
| Number of Detects | 100 | Number of Non-Detects | 20 |
| Number of Distinct Detects | 60 | Number of Distinct Non-Detects | 18 |
| Minimum Detect | 0.031 | Minimum Non-Detect | 0.46 |
| Maximum Detect | 2.6 | Maximum Non-Detect | 2.4 |
| Variance Detects | 0.143 | Percent Non-Detects | 16.67% |
| Mean Detects | 0.338 | SD Detects | 0.378 |
| Median Detects | 0.24 | CV Detects | 1.118 |
| Skewness Detects | 3.964 | Kurtosis Detects | 19.46 |
| Mean of Logged Detects | -1.435 | SD of Logged Detects | 0.815 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.612 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.227 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0886 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.326 | Standard Error of Mean | 0.0331 |
| SD | 0.352 | 95% KM (BCA) UCL | 0.388 |
| 95% KM (t) UCL | 0.381 | 95% KM (Percentile Bootstrap) UCL | 0.386 |
| 95% KM (z) UCL | 0.38 | 95% KM Bootstrap t UCL | 0.4 |
| 90% KM Chebyshev UCL | 0.425 | 95% KM Chebyshev UCL | 0.47 |
| 97.5% KM Chebyshev UCL | 0.532 | 99% KM Chebyshev UCL | 0.655 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.551 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.769 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.114 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.091 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.574 | k star (bias corrected MLE) | 1.533 |
| Theta hat (MLE) | 0.215 | Theta star (bias corrected MLE) | 0.22 |
| nu hat (MLE) | 314.8 | nu star (bias corrected) | 306.7 |
| MLE Mean (bias corrected) | 0.338 | MLE Sd (bias corrected) | 0.273 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.857 | nu hat (KM) | 205.7 |
| Approximate Chi Square Value (205.74, α) | 173.5 | Adjusted Chi Square Value (205.74, β) | 173.2 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.386 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.387 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.031 | Mean | 0.32 |
| Maximum | 2.6 | Median | 0.232 |
| SD | 0.348 | CV | 1.089 |
| k hat (MLE) | 1.779 | k star (bias corrected MLE) | 1.74 |
| Theta hat (MLE) | 0.18 | Theta star (bias corrected MLE) | 0.184 |
| nu hat (MLE) | 426.9 | nu star (bias corrected) | 417.5 |
| MLE Mean (bias corrected) | 0.32 | MLE Sd (bias corrected) | 0.242 |
| | | Adjusted Level of Significance (β) | 0.048 |
| Approximate Chi Square Value (417.53, α) | 371.2 | Adjusted Chi Square Value (417.53, β) | 370.6 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.36 | 95% Gamma Adjusted UCL (use when n<50) | 0.36 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.0688 | **Lilliefors GOF Test** | |

| | | | |
|---|---|---|---|
| 5% Lilliefors Critical Value | 0.0886 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.319 | Mean in Log Scale | -1.448 |
| SD in Original Scale | 0.348 | SD in Log Scale | 0.747 |
| 95% t UCL (assumes normality of ROS data) | 0.371 | 95% Percentile Bootstrap UCL | 0.376 |
| 95% BCA Bootstrap UCL | 0.389 | 95% Bootstrap t UCL | 0.394 |
| 95% H-UCL (Log ROS) | 0.357 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -1.454 | 95% H-UCL (KM -Log) | 0.372 |
| KM SD (logged) | 0.795 | 95% Critical H Value (KM-Log) | 2.045 |
| KM Standard Error of Mean (logged) | 0.0784 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.368 | Mean in Log Scale | -1.319 |
| SD in Original Scale | 0.363 | SD in Log Scale | 0.805 |
| 95% t UCL (Assumes normality) | 0.423 | 95% H-Stat UCL | 0.43 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Lognormal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (BCA) UCL | 0.388 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

| Analyte | Exp Area | Matrix | Valid Obs | Rec. UCL | Method | Max | EPC=Max |
|---|---|---|---|---|---|---|---|
| ALUMINUM | KWL | Sediment | 135 | 16110 | 95% Approximate Gamma UCL | 44100 | FALSE |
| ANTIMONY | KWL | Sediment | 135 | 2.0 | 95% KM (t) UCL | 17 | FALSE |
| ARSENIC | KWL | Sediment | 124 | 88 | 95% Chebyshev (Mean, Sd) UCL | 277 | FALSE |
| CADMIUM | KWL | Sediment | 126 | 7.7 | 97.5% KM (Chebyshev) UCL | 16 | FALSE |
| CHROMIUM | KWL | Sediment | 135 | 173 | 95% Chebyshev (Mean, Sd) UCL | 696 | FALSE |
| COBALT | KWL | Sediment | 135 | 8.6 | 95% KM (Chebyshev) UCL | 17 | FALSE |
| COPPER | KWL | Sediment | 125 | 209 | 95% Chebyshev (Mean, Sd) UCL | 462 | FALSE |
| CYANIDE | KWL | Sediment | 133 | 4.1 | 95% KM (BCA) UCL | 72 | FALSE |
| IRON | KWL | Sediment | 135 | 26538 | 95% Chebyshev (Mean, Sd) UCL | 52700 | FALSE |
| LEAD | KWL | Sediment | 135 | 1415 | 95% Chebyshev (Mean, Sd) UCL | 6720 | FALSE |
| MANGANESE | KWL | Sediment | 135 | 142 | 95% Chebyshev (Mean, Sd) UCL | 383 | FALSE |
| NICKEL | KWL | Sediment | 135 | 37 | 95% KM (Chebyshev) UCL | 471 | FALSE |
| THALLIUM | KWL | Sediment | 135 | 0.47 | 95% KM (t) UCL | 9.8 | FALSE |
| VANADIUM | KWL | Sediment | 135 | 26 | 95% Approximate Gamma UCL | 106 | FALSE |
| AROCLOR-1254 | KWL | Sediment | 111 | 0.16 | 95% KM (t) UCL | 0.51 | FALSE |
| BENZO(A)ANTHRACENE | KWL | Sediment | 111 | 1.1 | 95% KM (Chebyshev) UCL | 15 | FALSE |
| BENZO(A)PYRENE | KWL | Sediment | 111 | 1.1 | 95% KM (Chebyshev) UCL | 11 | FALSE |
| BENZO(B)FLUORANTHENE | KWL | Sediment | 111 | 1.4 | 95% KM (Chebyshev) UCL | 15 | FALSE |
| BENZO(K)FLUORANTHENE | KWL | Sediment | 111 | 1.2 | 95% KM (Chebyshev) UCL | 11 | FALSE |
| DIBENZO(A,H)ANTHRACENE | KWL | Sediment | 111 | 0.16 | 95% KM (t) UCL | 1.4 | FALSE |
| INDENO(1,2,3-CD)PYRENE | KWL | Sediment | 111 | 0.42 | 95% KM (Chebyshev) UCL | 3.2 | FALSE |

SD_KWL_7.10.17.xlsx

## UCL Statistics for Data Sets with Non-Detects

| | |
|---|---|
| User Selected Options | |
| Date/Time of Computation | 7/10/2017 11:13:25 AM |
| From File | SD_KWL_7.10.17.xlsx |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Number of Bootstrap Operations | 2000 |

## ALUMINUM

### General Statistics

| | | | |
|---|---|---|---|
| Total Number of Observations | 135 | Number of Distinct Observations | 125 |
| | | Number of Missing Observations | 0 |
| Minimum | 213 | Mean | 13988 |
| Maximum | 44100 | Median | 10400 |
| SD | 12292 | Std. Error of Mean | 1058 |
| Coefficient of Variation | 0.879 | Skewness | 0.867 |

### Normal GOF Test

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.856 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 0 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.131 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0763 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

### Assuming Normal Distribution

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 15741 | 95% Adjusted-CLT UCL (Chen-1995) | 15813 |
| | | 95% Modified-t UCL (Johnson-1978) | 15754 |

### Gamma GOF Test

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.243 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.78 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.0823 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.0826 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data follow Appr. Gamma Distribution at 5% Significance Level

### Gamma Statistics

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.108 | k star (bias corrected MLE) | 1.089 |
| Theta hat (MLE) | 12620 | Theta star (bias corrected MLE) | 12848 |
| nu hat (MLE) | 299.3 | nu star (bias corrected) | 294 |
| MLE Mean (bias corrected) | 13988 | MLE Sd (bias corrected) | 13406 |
| | | Approximate Chi Square Value (0.05) | 255.2 |
| Adjusted Level of Significance | 0.0482 | Adjusted Chi Square Value | 254.9 |

### Assuming Gamma Distribution

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50) | 16110 | 95% Adjusted Gamma UCL (use when n<50) | 16135 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.935 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 1.10E-06 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.0961 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.0763 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 5.361 | Mean of logged Data | 9.031 |
| Maximum of Logged Data | 10.69 | SD of logged Data | 1.153 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 20512 | 90% Chebyshev (MVUE) UCL | 22182 |
| 95% Chebyshev (MVUE) UCL | 24927 | 97.5% Chebyshev (MVUE) UCL | 28738 |
| 99% Chebyshev (MVUE) UCL | 36222 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 15729 | 95% Jackknife UCL | 15741 |
| 95% Standard Bootstrap UCL | 15692 | 95% Bootstrap-t UCL | 15795 |
| 95% Hall's Bootstrap UCL | 15863 | 95% Percentile Bootstrap UCL | 15750 |
| 95% BCA Bootstrap UCL | 15738 | | |
| 90% Chebyshev(Mean, Sd) UCL | 17162 | 95% Chebyshev(Mean, Sd) UCL | 18600 |
| 97.5% Chebyshev(Mean, Sd) UCL | 20595 | 99% Chebyshev(Mean, Sd) UCL | 24515 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Approximate Gamma UCL | 16110 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**ANTIMONY**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 135 | Number of Distinct Observations | 77 |
| Number of Detects | 79 | Number of Non-Detects | 56 |
| Number of Distinct Detects | 52 | Number of Distinct Non-Detects | 39 |
| Minimum Detect | 0.22 | Minimum Non-Detect | 0.15 |
| Maximum Detect | 16.9 | Maximum Non-Detect | 32.7 |
| Variance Detects | 6.026 | Percent Non-Detects | 41.48% |
| Mean Detects | 2.364 | SD Detects | 2.455 |
| Median Detects | 1.635 | CV Detects | 1.038 |
| Skewness Detects | 3.398 | Kurtosis Detects | 16.19 |
| Mean of Logged Detects | 0.471 | SD of Logged Detects | 0.921 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.702 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.195 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0997 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 1.717 | Standard Error of Mean | 0.193 |
| SD | 2.134 | 95% KM (BCA) UCL | 2.043 |
| 95% KM (t) UCL | 2.037 | 95% KM (Percentile Bootstrap) UCL | 2.049 |
| 95% KM (z) UCL | 2.035 | 95% KM Bootstrap t UCL | 2.097 |
| 90% KM Chebyshev UCL | 2.297 | 95% KM Chebyshev UCL | 2.56 |
| 97.5% KM Chebyshev UCL | 2.925 | 99% KM Chebyshev UCL | 3.641 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.739 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.772 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.0807 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.102 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.429 | k star (bias corrected MLE) | 1.383 |
| Theta hat (MLE) | 1.654 | Theta star (bias corrected MLE) | 1.709 |
| nu hat (MLE) | 225.8 | nu star (bias corrected) | 218.5 |
| MLE Mean (bias corrected) | 2.364 | MLE Sd (bias corrected) | 2.01 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.647 | nu hat (KM) | 174.8 |
| Approximate Chi Square Value (174.81, α) | 145.2 | Adjusted Chi Square Value (174.81, β) | 144.9 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 2.067 | 95% Gamma Adjusted KM-UCL (use when n<50) | 2.071 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 1.551 |
| Maximum | 16.9 | Median | 0.934 |
| SD | 2.128 | CV | 1.372 |
| k hat (MLE) | 0.541 | k star (bias corrected MLE) | 0.534 |
| Theta hat (MLE) | 2.866 | Theta star (bias corrected MLE) | 2.904 |
| nu hat (MLE) | 146.2 | nu star (bias corrected) | 144.2 |
| MLE Mean (bias corrected) | 1.551 | MLE Sd (bias corrected) | 2.123 |
| | | Adjusted Level of Significance (β) | 0.0482 |
| Approximate Chi Square Value (144.25, α) | 117.5 | Adjusted Chi Square Value (144.25, β) | 117.2 |
| 95% Gamma Approximate UCL (use when n>=50) | 1.905 | 95% Gamma Adjusted UCL (use when n<50) | 1.909 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.124 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0997 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data appear Approximate Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 1.637 | Mean in Log Scale | 3.82E-04 |
| SD in Original Scale | 2.074 | SD in Log Scale | 0.988 |
| 95% t UCL (assumes normality of ROS data) | 1.933 | 95% Percentile Bootstrap UCL | 1.965 |
| 95% BCA Bootstrap UCL | 2.016 | 95% Bootstrap t UCL | 2.029 |
| 95% H-UCL (Log ROS) | 1.964 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -0.0766 | 95% H-UCL (KM -Log) | 2.384 |
| KM SD (logged) | 1.186 | 95% Critical H Value (KM-Log) | 2.369 |
| KM Standard Error of Mean (logged) | 0.118 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 2.327 | Mean in Log Scale | 0.215 |
| SD in Original Scale | 2.965 | SD in Log Scale | 1.229 |
| 95% t UCL (Assumes normality) | 2.75 | 95% H-Stat UCL | 3.408 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Gamma Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 2.037 | 95% GROS Approximate Gamma UCL | 1.905 |
| 95% Approximate Gamma KM-UCL | 2.067 | | |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**ARSENIC**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 124 | Number of Distinct Observations | 108 |
| | | Number of Missing Observations | 11 |
| Minimum | 0.73 | Mean | 67.46 |
| Maximum | 277 | Median | 74 |
| SD | 52.53 | Std. Error of Mean | 4.717 |
| Coefficient of Variation | 0.779 | Skewness | 0.61 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.901 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 1.88E-11 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.125 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0796 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 75.28 | 95% Adjusted-CLT UCL (Chen-1995) | 75.5 |
| | | 95% Modified-t UCL (Johnson-1978) | 75.33 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 5.523 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.787 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.181 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.086 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.912 | k star (bias corrected MLE) | 0.895 |
| Theta hat (MLE) | 74 | Theta star (bias corrected MLE) | 75.38 |
| nu hat (MLE) | 226.1 | nu star (bias corrected) | 222 |
| MLE Mean (bias corrected) | 67.46 | MLE Sd (bias corrected) | 71.31 |
| | | Approximate Chi Square Value (0.05) | 188.5 |
| Adjusted Level of Significance | 0.0481 | Adjusted Chi Square Value | 188.1 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 79.45 | 95% Adjusted Gamma UCL (use when n<50) | 79.6 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.829 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 0 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.226 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.0796 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -0.315 | Mean of logged Data | 3.571 |
| Maximum of Logged Data | 5.624 | SD of logged Data | 1.473 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 149.7 | 90% Chebyshev (MVUE) UCL | 160.3 |
| 95% Chebyshev (MVUE) UCL | 186.1 | 97.5% Chebyshev (MVUE) UCL | 221.9 |
| 99% Chebyshev (MVUE) UCL | 292.3 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 75.22 | 95% Jackknife UCL | 75.28 |
| 95% Standard Bootstrap UCL | 75.22 | 95% Bootstrap-t UCL | 75.35 |
| 95% Hall's Bootstrap UCL | 75.34 | 95% Percentile Bootstrap UCL | 75.06 |
| 95% BCA Bootstrap UCL | 75.91 | | |
| 90% Chebyshev(Mean, Sd) UCL | 81.62 | 95% Chebyshev(Mean, Sd) UCL | 88.03 |
| 97.5% Chebyshev(Mean, Sd) UCL | 96.92 | 99% Chebyshev(Mean, Sd) UCL | 114.4 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 88.03 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**CADMIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 126 | Number of Distinct Observations | 98 |
| | | Number of Missing Observations | 9 |
| Number of Detects | 123 | Number of Non-Detects | 3 |
| Number of Distinct Detects | 96 | Number of Distinct Non-Detects | 3 |
| Minimum Detect | 0.022 | Minimum Non-Detect | 0.017 |
| Maximum Detect | 15.6 | Maximum Non-Detect | 0.14 |
| Variance Detects | 19.31 | Percent Non-Detects | 2.38% |
| Mean Detects | 5.365 | SD Detects | 4.395 |
| Median Detects | 5.5 | CV Detects | 0.819 |
| Skewness Detects | 0.31 | Kurtosis Detects | -1.068 |
| Mean of Logged Detects | 0.898 | SD of Logged Detects | 1.678 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.89 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 3.00E-13 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.149 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0799 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 5.238 | Standard Error of Mean | 0.394 |
| SD | 4.4 | 95% KM (BCA) UCL | 5.906 |
| 95% KM (t) UCL | 5.89 | 95% KM (Percentile Bootstrap) UCL | 5.906 |
| 95% KM (z) UCL | 5.885 | 95% KM Bootstrap t UCL | 5.928 |
| 90% KM Chebyshev UCL | 6.419 | 95% KM Chebyshev UCL | 6.954 |
| 97.5% KM Chebyshev UCL | 7.696 | 99% KM Chebyshev UCL | 9.154 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 4.577 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.795 | Detected Data Not Gamma Distributed at 5% Significance Level | |

| | | | |
|---|---|---|---|
| K-S Test Statistic | 0.173 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.0868 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.763 | k star (bias corrected MLE) | 0.75 |
| Theta hat (MLE) | 7.027 | Theta star (bias corrected MLE) | 7.151 |
| nu hat (MLE) | 187.8 | nu star (bias corrected) | 184.6 |
| MLE Mean (bias corrected) | 5.365 | MLE Sd (bias corrected) | 6.194 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 1.417 | nu hat (KM) | 357.1 |
| Approximate Chi Square Value (357.12, α) | 314.3 | Adjusted Chi Square Value (357.12, β) | 313.9 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 5.951 | 95% Gamma Adjusted KM-UCL (use when n<50) | 5.96 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.022 | Mean | 5.277 |
| Maximum | 15.6 | Median | 5.45 |
| SD | 4.379 | CV | 0.83 |
| k hat (MLE) | 0.77 | k star (bias corrected MLE) | 0.757 |
| Theta hat (MLE) | 6.855 | Theta star (bias corrected MLE) | 6.973 |
| nu hat (MLE) | 194 | nu star (bias corrected) | 190.7 |
| MLE Mean (bias corrected) | 5.277 | MLE Sd (bias corrected) | 6.066 |
| | | Adjusted Level of Significance (β) | 0.0481 |
| Approximate Chi Square Value (190.70, α) | 159.8 | Adjusted Chi Square Value (190.70, β) | 159.4 |
| 95% Gamma Approximate UCL (use when n>=50) | 6.299 | 95% Gamma Adjusted UCL (use when n<50) | 6.312 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.21 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0799 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 5.24 | Mean in Log Scale | 0.818 |
| SD in Original Scale | 4.416 | SD in Log Scale | 1.739 |
| 95% t UCL (assumes normality of ROS data) | 5.891 | 95% Percentile Bootstrap UCL | 5.893 |
| 95% BCA Bootstrap UCL | 5.889 | 95% Bootstrap t UCL | 5.883 |
| 95% H-UCL (Log ROS) | 16.25 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 5.238 | Mean in Log Scale | 0.794 |
| SD in Original Scale | 4.418 | SD in Log Scale | 1.793 |
| 95% t UCL (Assumes normality) | 5.89 | 95% H-Stat UCL | 17.9 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 97.5% KM (Chebyshev) UCL | 7.696 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**CHROMIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 135 | Number of Distinct Observations | 124 |
| | | Number of Missing Observations | 0 |
| Minimum | 1.2 | Mean | 127.3 |
| Maximum | 696 | Median | 106.5 |
| SD | 120.7 | Std. Error of Mean | 10.38 |
| Coefficient of Variation | 0.948 | Skewness | 1.902 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.815 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 0 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.148 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0763 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
|---|---|---|---|
| 95% Student's-t UCL | 144.5 | 95% Adjusted-CLT UCL (Chen-1995) | 146.2 |
| | | 95% Modified-t UCL (Johnson-1978) | 144.8 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.891 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.786 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.147 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.083 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.941 | k star (bias corrected MLE) | 0.925 |
| Theta hat (MLE) | 135.2 | Theta star (bias corrected MLE) | 137.5 |
| nu hat (MLE) | 254.2 | nu star (bias corrected) | 249.9 |
| MLE Mean (bias corrected) | 127.3 | MLE Sd (bias corrected) | 132.3 |
| | | Approximate Chi Square Value (0.05) | 214.3 |
| Adjusted Level of Significance | 0.0482 | Adjusted Chi Square Value | 213.9 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 148.4 | 95% Adjusted Gamma UCL (use when n<50) | 148.7 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.903 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 2.14E-12 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.169 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.0763 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 0.182 | Mean of logged Data | 4.229 |
| Maximum of Logged Data | 6.545 | SD of logged Data | 1.335 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 223.6 | 90% Chebyshev (MVUE) UCL | 241.2 |
| 95% Chebyshev (MVUE) UCL | 275.7 | 97.5% Chebyshev (MVUE) UCL | 323.5 |
| 99% Chebyshev (MVUE) UCL | 417.4 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 144.4 | 95% Jackknife UCL | 144.5 |
| 95% Standard Bootstrap UCL | 144.4 | 95% Bootstrap-t UCL | 147 |
| 95% Hall's Bootstrap UCL | 148.1 | 95% Percentile Bootstrap UCL | 144.3 |
| 95% BCA Bootstrap UCL | 145.1 | | |
| 90% Chebyshev(Mean, Sd) UCL | 158.4 | 95% Chebyshev(Mean, Sd) UCL | 172.5 |
| 97.5% Chebyshev(Mean, Sd) UCL | 192.1 | 99% Chebyshev(Mean, Sd) UCL | 230.6 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 172.5 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**COBALT**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 135 | Number of Distinct Observations | 101 |
| Number of Detects | 131 | Number of Non-Detects | 4 |
| Number of Distinct Detects | 98 | Number of Distinct Non-Detects | 4 |
| Minimum Detect | 0.087 | Minimum Non-Detect | 0.57 |
| Maximum Detect | 17.3 | Maximum Non-Detect | 0.79 |
| Variance Detects | 23.68 | Percent Non-Detects | 2.96% |
| Mean Detects | 6.938 | SD Detects | 4.866 |

| | | | |
|---|---|---|---|
| Median Detects | 7.7 | CV Detects | 0.701 |
| Skewness Detects | -0.0293 | Kurtosis Detects | -1.355 |
| Mean of Logged Detects | 1.39 | SD of Logged Detects | 1.348 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.893 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 8.86E-14 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.138 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0774 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 6.744 | Standard Error of Mean | 0.424 |
| SD | 4.903 | 95% KM (BCA) UCL | 7.443 |
| 95% KM (t) UCL | 7.445 | 95% KM (Percentile Bootstrap) UCL | 7.464 |
| 95% KM (z) UCL | 7.441 | 95% KM Bootstrap t UCL | 7.47 |
| 90% KM Chebyshev UCL | 8.015 | 95% KM Chebyshev UCL | 8.59 |
| 97.5% KM Chebyshev UCL | 9.389 | 99% KM Chebyshev UCL | 10.96 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 6.419 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.782 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.175 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.0838 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.049 | k star (bias corrected MLE) | 1.03 |
| Theta hat (MLE) | 6.613 | Theta star (bias corrected MLE) | 6.735 |
| nu hat (MLE) | 274.9 | nu star (bias corrected) | 269.9 |
| MLE Mean (bias corrected) | 6.938 | MLE Sd (bias corrected) | 6.836 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 1.892 | nu hat (KM) | 510.7 |
| Approximate Chi Square Value (510.72, α) | 459.3 | Adjusted Chi Square Value (510.72, β) | 458.8 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 7.499 | 95% Gamma Adjusted KM-UCL (use when n<50) | 7.507 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.087 | Mean | 6.812 |
| Maximum | 17.3 | Median | 7.3 |
| SD | 4.848 | CV | 0.712 |
| k hat (MLE) | 1.06 | k star (bias corrected MLE) | 1.042 |
| Theta hat (MLE) | 6.426 | Theta star (bias corrected MLE) | 6.54 |
| nu hat (MLE) | 286.2 | nu star (bias corrected) | 281.2 |
| MLE Mean (bias corrected) | 6.812 | MLE Sd (bias corrected) | 6.675 |

| | | | |
|---|---|---|---|
| | | Adjusted Level of Significance (β) | 0.0482 |
| Approximate Chi Square Value (281.21, α) | 243.4 | Adjusted Chi Square Value (281.21, β) | 243 |
| 95% Gamma Approximate UCL (use when n>=50) | 7.871 | 95% Gamma Adjusted UCL (use when n<50) | 7.883 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.194 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0774 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 6.752 | Mean in Log Scale | 1.336 |
| SD in Original Scale | 4.911 | SD in Log Scale | 1.364 |
| 95% t UCL (assumes normality of ROS data) | 7.452 | 95% Percentile Bootstrap UCL | 7.399 |
| 95% BCA Bootstrap UCL | 7.401 | 95% Bootstrap t UCL | 7.49 |
| 95% H-UCL (Log ROS) | 13.02 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 6.743 | Mean in Log Scale | 1.318 |
| SD in Original Scale | 4.922 | SD in Log Scale | 1.392 |
| 95% t UCL (Assumes normality) | 7.445 | 95% H-Stat UCL | 13.41 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (Chebyshev) UCL | 8.59 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**COPPER**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 125 | Number of Distinct Observations | 118 |
| | | Number of Missing Observations | 10 |
| Minimum | 0.18 | Mean | 154 |
| Maximum | 462 | Median | 130 |
| SD | 140.3 | Std. Error of Mean | 12.54 |
| Coefficient of Variation | 0.911 | Skewness | 0.511 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.868 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 0 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.141 | **Lilliefors GOF Test** | |

| | | | |
|---|---|---|---|
| 5% Lilliefors Critical Value | 0.0792 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 174.8 | 95% Adjusted-CLT UCL (Chen-1995) | 175.3 |
| | | 95% Modified-t UCL (Johnson-1978) | 174.9 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 3.397 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.808 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.124 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.0871 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.618 | k star (bias corrected MLE) | 0.609 |
| Theta hat (MLE) | 249.1 | Theta star (bias corrected MLE) | 253 |
| nu hat (MLE) | 154.6 | nu star (bias corrected) | 152.2 |
| MLE Mean (bias corrected) | 154 | MLE Sd (bias corrected) | 197.4 |
| | | Approximate Chi Square Value (0.05) | 124.7 |
| Adjusted Level of Significance | 0.0481 | Adjusted Chi Square Value | 124.4 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 188 | 95% Adjusted Gamma UCL (use when n<50) | 188.4 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.851 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 0 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.174 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.0792 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -1.715 | Mean of logged Data | 4.042 |
| Maximum of Logged Data | 6.136 | SD of logged Data | 1.944 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 657.8 | 90% Chebyshev (MVUE) UCL | 659.6 |
| 95% Chebyshev (MVUE) UCL | 794.6 | 97.5% Chebyshev (MVUE) UCL | 982 |
| 99% Chebyshev (MVUE) UCL | 1350 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 174.6 | 95% Jackknife UCL | 174.8 |
| 95% Standard Bootstrap UCL | 174.1 | 95% Bootstrap-t UCL | 175.8 |
| 95% Hall's Bootstrap UCL | 174.6 | 95% Percentile Bootstrap UCL | 174.3 |

| | | | |
|---|---|---|---|
| 95% BCA Bootstrap UCL | 175.3 | | |
| 90% Chebyshev(Mean, Sd) UCL | 191.6 | 95% Chebyshev(Mean, Sd) UCL | 208.7 |
| 97.5% Chebyshev(Mean, Sd) UCL | 232.3 | 99% Chebyshev(Mean, Sd) UCL | 278.8 |

**Suggested UCL to Use**

95% Chebyshev (Mean, Sd) UCL 208.7

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**CYANIDE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 133 | Number of Distinct Observations | 68 |
| | | Number of Missing Observations | 2 |
| Number of Detects | 47 | Number of Non-Detects | 86 |
| Number of Distinct Detects | 34 | Number of Distinct Non-Detects | 47 |
| Minimum Detect | 0.25 | Minimum Non-Detect | 0.04 |
| Maximum Detect | 72.1 | Maximum Non-Detect | 3.9 |
| Variance Detects | 231.3 | Percent Non-Detects | 64.66% |
| Mean Detects | 6.441 | SD Detects | 15.21 |
| Median Detects | 2.4 | CV Detects | 2.361 |
| Skewness Detects | 3.844 | Kurtosis Detects | 14.24 |
| Mean of Logged Detects | 0.876 | SD of Logged Detects | 1.194 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.382 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.946 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.406 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.129 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 2.527 | Standard Error of Mean | 0.827 |
| SD | 9.416 | 95% KM (BCA) UCL | 4.085 |
| 95% KM (t) UCL | 3.897 | 95% KM (Percentile Bootstrap) UCL | 3.966 |
| 95% KM (z) UCL | 3.887 | 95% KM Bootstrap t UCL | 5.39 |
| 90% KM Chebyshev UCL | 5.008 | 95% KM Chebyshev UCL | 6.131 |
| 97.5% KM Chebyshev UCL | 7.691 | 99% KM Chebyshev UCL | 10.75 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 4.859 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.803 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.293 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.135 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.623 | k star (bias corrected MLE) | 0.597 |
| Theta hat (MLE) | 10.34 | Theta star (bias corrected MLE) | 10.79 |
| nu hat (MLE) | 58.53 | nu star (bias corrected) | 56.13 |
| MLE Mean (bias corrected) | 6.441 | MLE Sd (bias corrected) | 8.336 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.072 | nu hat (KM) | 19.16 |
| Approximate Chi Square Value (19.16, α) | 10.23 | Adjusted Chi Square Value (19.16, β) | 10.16 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 4.731 | 95% Gamma Adjusted KM-UCL (use when n<50) | 4.764 |

Gamma (KM) may not be used when k hat (KM) is < 0.1

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 2.286 |
| Maximum | 72.1 | Median | 0.01 |
| SD | 9.494 | CV | 4.153 |
| k hat (MLE) | 0.211 | k star (bias corrected MLE) | 0.211 |
| Theta hat (MLE) | 10.86 | Theta star (bias corrected MLE) | 10.84 |
| nu hat (MLE) | 56.01 | nu star (bias corrected) | 56.08 |
| MLE Mean (bias corrected) | 2.286 | MLE Sd (bias corrected) | 4.978 |
| | | Adjusted Level of Significance (β) | 0.0482 |
| Approximate Chi Square Value (56.08, α) | 39.87 | Adjusted Chi Square Value (56.08, β) | 39.72 |
| 95% Gamma Approximate UCL (use when n>=50) | 3.215 | 95% Gamma Adjusted UCL (use when n<50) | 3.227 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.91 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.946 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.16 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.129 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 2.466 | Mean in Log Scale | -0.671 |
| SD in Original Scale | 9.453 | SD in Log Scale | 1.476 |
| 95% t UCL (assumes normality of ROS data) | 3.824 | 95% Percentile Bootstrap UCL | 3.999 |
| 95% BCA Bootstrap UCL | 4.481 | 95% Bootstrap t UCL | 5.386 |
| 95% H-UCL (Log ROS) | 2.141 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 2.812 | Mean in Log Scale | -0.121 |
| SD in Original Scale | 9.388 | SD in Log Scale | 1.398 |
| 95% t UCL (Assumes normality) | 4.161 | 95% H-Stat UCL | 3.223 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (BCA) UCL | 4.085 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**IRON**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 135 | Number of Distinct Observations | 127 |
| | | Number of Missing Observations | 0 |
| Minimum | 377 | Mean | 20906 |
| Maximum | 52700 | Median | 19100 |
| SD | 15012 | Std. Error of Mean | 1292 |
| Coefficient of Variation | 0.718 | Skewness | 0.381 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.913 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 1.44E-10 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.105 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0763 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
|---|---|---|---|
| 95% Student's-t UCL | 23046 | 95% Adjusted-CLT UCL (Chen-1995) | 23077 |
| | | 95% Modified-t UCL (Johnson-1978) | 23053 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.908 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.775 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.101 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.0823 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.309 | k star (bias corrected MLE) | 1.285 |
| Theta hat (MLE) | 15965 | Theta star (bias corrected MLE) | 16265 |
| nu hat (MLE) | 353.6 | nu star (bias corrected) | 347 |
| MLE Mean (bias corrected) | 20906 | MLE Sd (bias corrected) | 18440 |
| | | Approximate Chi Square Value (0.05) | 304.9 |
| Adjusted Level of Significance | 0.0482 | Adjusted Chi Square Value | 304.4 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 23798 | 95% Adjusted Gamma UCL (use when n<50) | 23831 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.883 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 2.22E-16 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.131 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.0763 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 5.932 | Mean of logged Data | 9.52 |
| Maximum of Logged Data | 10.87 | SD of logged Data | 1.123 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 32043 | 90% Chebyshev (MVUE) UCL | 34646 |
| 95% Chebyshev (MVUE) UCL | 38826 | 97.5% Chebyshev (MVUE) UCL | 44627 |
| 99% Chebyshev (MVUE) UCL | 56023 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 23031 | 95% Jackknife UCL | 23046 |
| 95% Standard Bootstrap UCL | 23061 | 95% Bootstrap-t UCL | 23115 |
| 95% Hall's Bootstrap UCL | 23204 | 95% Percentile Bootstrap UCL | 23020 |
| 95% BCA Bootstrap UCL | 23222 | | |
| 90% Chebyshev(Mean, Sd) UCL | 24782 | 95% Chebyshev(Mean, Sd) UCL | 26538 |
| 97.5% Chebyshev(Mean, Sd) UCL | 28975 | 99% Chebyshev(Mean, Sd) UCL | 33762 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 26538 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**LEAD**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 135 | Number of Distinct Observations | 117 |
| | | Number of Missing Observations | 0 |
| Minimum | 1.8 | Mean | 1015 |
| Maximum | 6720 | Median | 891 |
| SD | 1068 | Std. Error of Mean | 91.88 |
| Coefficient of Variation | 1.052 | Skewness | 2.346 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.783 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 0 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.171 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0763 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 1167 | 95% Adjusted-CLT UCL (Chen-1995) | 1186 |
| | | 95% Modified-t UCL (Johnson-1978) | 1170 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 4.551 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.81 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.162 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.0845 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.595 | k star (bias corrected MLE) | 0.587 |
| Theta hat (MLE) | 1705 | Theta star (bias corrected MLE) | 1729 |
| nu hat (MLE) | 160.7 | nu star (bias corrected) | 158.5 |
| MLE Mean (bias corrected) | 1015 | MLE Sd (bias corrected) | 1325 |
| | | Approximate Chi Square Value (0.05) | 130.4 |
| Adjusted Level of Significance | 0.0482 | Adjusted Chi Square Value | 130.1 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 1234 | 95% Adjusted Gamma UCL (use when n<50) | 1236 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.837 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 0 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.205 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.0763 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 0.588 | Mean of logged Data | 5.884 |
| Maximum of Logged Data | 8.813 | SD of logged Data | 2.017 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 4869 | 90% Chebyshev (MVUE) UCL | 4839 |
| 95% Chebyshev (MVUE) UCL | 5841 | 97.5% Chebyshev (MVUE) UCL | 7233 |
| 99% Chebyshev (MVUE) UCL | 9966 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 1166 | 95% Jackknife UCL | 1167 |
| 95% Standard Bootstrap UCL | 1165 | 95% Bootstrap-t UCL | 1187 |
| 95% Hall's Bootstrap UCL | 1200 | 95% Percentile Bootstrap UCL | 1172 |
| 95% BCA Bootstrap UCL | 1181 | | |
| 90% Chebyshev(Mean, Sd) UCL | 1291 | 95% Chebyshev(Mean, Sd) UCL | 1415 |
| 97.5% Chebyshev(Mean, Sd) UCL | 1589 | 99% Chebyshev(Mean, Sd) UCL | 1929 |

**Suggested UCL to Use**

95% Chebyshev (Mean, Sd) UCL 1415

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**MANGANESE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 135 | Number of Distinct Observations | 121 |
| | | Number of Missing Observations | 0 |
| Minimum | 2.1 | Mean | 106 |
| Maximum | 383 | Median | 80.6 |
| SD | 96.06 | Std. Error of Mean | 8.267 |
| Coefficient of Variation | 0.906 | Skewness | 0.743 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.873 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 0 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.141 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0763 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
|---|---|---|---|
| 95% Student's-t UCL | 119.7 | 95% Adjusted-CLT UCL (Chen-1995) | 120.2 |
| | | 95% Modified-t UCL (Johnson-1978) | 119.8 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.206 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.788 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.101 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.0831 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.898 | k star (bias corrected MLE) | 0.883 |
| Theta hat (MLE) | 118.1 | Theta star (bias corrected MLE) | 120.1 |

| | | | |
|---|---|---|---|
| nu hat (MLE) | 242.3 | nu star (bias corrected) | 238.3 |
| MLE Mean (bias corrected) | 106 | MLE Sd (bias corrected) | 112.8 |
| | | Approximate Chi Square Value (0.05) | 203.6 |
| Adjusted Level of Significance | 0.0482 | Adjusted Chi Square Value | 203.2 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 124.1 | 95% Adjusted Gamma UCL (use when n<50) | 124.3 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.906 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 7.82E-12 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.121 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.0763 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 0.742 | Mean of logged Data | 4.012 |
| Maximum of Logged Data | 5.948 | SD of logged Data | 1.349 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 184.4 | 90% Chebyshev (MVUE) UCL | 198.8 |
| 95% Chebyshev (MVUE) UCL | 227.5 | 97.5% Chebyshev (MVUE) UCL | 267.3 |
| 99% Chebyshev (MVUE) UCL | 345.4 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 119.6 | 95% Jackknife UCL | 119.7 |
| 95% Standard Bootstrap UCL | 119.7 | 95% Bootstrap-t UCL | 120 |
| 95% Hall's Bootstrap UCL | 120.2 | 95% Percentile Bootstrap UCL | 119.8 |
| 95% BCA Bootstrap UCL | 119.2 | | |
| 90% Chebyshev(Mean, Sd) UCL | 130.8 | 95% Chebyshev(Mean, Sd) UCL | 142 |
| 97.5% Chebyshev(Mean, Sd) UCL | 157.6 | 99% Chebyshev(Mean, Sd) UCL | 188.3 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 142 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**NICKEL**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 135 | Number of Distinct Observations | 113 |
| Number of Detects | 133 | Number of Non-Detects | 2 |
| Number of Distinct Detects | 111 | Number of Distinct Non-Detects | 2 |

| | | | |
|---|---|---|---|
| Minimum Detect | 0.37 | Minimum Non-Detect | 0.069 |
| Maximum Detect | 471 | Maximum Non-Detect | 0.22 |
| Variance Detects | 1727 | Percent Non-Detects | 1.48% |
| Mean Detects | 21.48 | SD Detects | 41.55 |
| Median Detects | 18.1 | CV Detects | 1.934 |
| Skewness Detects | 9.72 | Kurtosis Detects | 105.5 |
| Mean of Logged Detects | 2.409 | SD of Logged Detects | 1.267 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.332 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.306 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0768 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 21.17 | Standard Error of Mean | 3.557 |
| SD | 41.17 | 95% KM (BCA) UCL | 28.45 |
| 95% KM (t) UCL | 27.06 | 95% KM (Percentile Bootstrap) UCL | 28.13 |
| 95% KM (z) UCL | 27.02 | 95% KM Bootstrap t UCL | 35.38 |
| 90% KM Chebyshev UCL | 31.84 | 95% KM Chebyshev UCL | 36.67 |
| 97.5% KM Chebyshev UCL | 43.38 | 99% KM Chebyshev UCL | 56.56 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.992 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.789 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.118 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.0837 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.889 | k star (bias corrected MLE) | 0.874 |
| Theta hat (MLE) | 24.17 | Theta star (bias corrected MLE) | 24.58 |
| nu hat (MLE) | 236.5 | nu star (bias corrected) | 232.5 |
| MLE Mean (bias corrected) | 21.48 | MLE Sd (bias corrected) | 22.98 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.264 | nu hat (KM) | 71.37 |
| Approximate Chi Square Value (71.37, α) | 52.92 | Adjusted Chi Square Value (71.37, β) | 52.75 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 28.55 | 95% Gamma Adjusted KM-UCL (use when n<50) | 28.64 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 21.17 |
| Maximum | 471 | Median | 17.9 |
| SD | 41.32 | CV | 1.952 |

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.795 | k star (bias corrected MLE) | 0.782 |
| Theta hat (MLE) | 26.64 | Theta star (bias corrected MLE) | 27.07 |
| nu hat (MLE) | 214.5 | nu star (bias corrected) | 211.1 |
| MLE Mean (bias corrected) | 21.17 | MLE Sd (bias corrected) | 23.94 |
| | | Adjusted Level of Significance (β) | 0.0482 |
| Approximate Chi Square Value (211.10, α) | 178.5 | Adjusted Chi Square Value (211.10, β) | 178.2 |
| 95% Gamma Approximate UCL (use when n>=50) | 25.04 | 95% Gamma Adjusted UCL (use when n<50) | 25.08 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.159 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0768 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 21.17 | Mean in Log Scale | 2.362 |
| SD in Original Scale | 41.32 | SD in Log Scale | 1.314 |
| 95% t UCL (assumes normality of ROS data) | 27.06 | 95% Percentile Bootstrap UCL | 27.94 |
| 95% BCA Bootstrap UCL | 32.66 | 95% Bootstrap t UCL | 35.35 |
| 95% H-UCL (Log ROS) | 33.42 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 21.17 | Mean in Log Scale | 2.332 |
| SD in Original Scale | 41.32 | SD in Log Scale | 1.408 |
| 95% t UCL (Assumes normality) | 27.06 | 95% H-Stat UCL | 38.05 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (Chebyshev) UCL | 36.67 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**THALLIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 135 | Number of Distinct Observations | 85 |
| Number of Detects | 9 | Number of Non-Detects | 126 |
| Number of Distinct Detects | 8 | Number of Distinct Non-Detects | 80 |
| Minimum Detect | 0.38 | Minimum Non-Detect | 0.15 |
| Maximum Detect | 9.8 | Maximum Non-Detect | 13.6 |
| Variance Detects | 8.95 | Percent Non-Detects | 93.33% |
| Mean Detects | 2.033 | SD Detects | 2.992 |
| Median Detects | 1.1 | CV Detects | 1.471 |

| | | | |
|---|---|---|---|
| Skewness Detects | 2.721 | Kurtosis Detects | 7.673 |
| Mean of Logged Detects | 0.139 | SD of Logged Detects | 1.01 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.583 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.829 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.349 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.295 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.322 | Standard Error of Mean | 0.0863 |
| SD | 0.895 | 95% KM (BCA) UCL | 0.484 |
| 95% KM (t) UCL | 0.465 | 95% KM (Percentile Bootstrap) UCL | 0.471 |
| 95% KM (z) UCL | 0.464 | 95% KM Bootstrap t UCL | 0.645 |
| 90% KM Chebyshev UCL | 0.581 | 95% KM Chebyshev UCL | 0.698 |
| 97.5% KM Chebyshev UCL | 0.861 | 99% KM Chebyshev UCL | 1.181 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.771 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.743 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.257 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.287 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data follow Appr. Gamma Distribution at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.01 | k star (bias corrected MLE) | 0.747 |
| Theta hat (MLE) | 2.013 | Theta star (bias corrected MLE) | 2.72 |
| nu hat (MLE) | 18.18 | nu star (bias corrected) | 13.45 |
| MLE Mean (bias corrected) | 2.033 | MLE Sd (bias corrected) | 2.352 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.129 | nu hat (KM) | 34.96 |
| Approximate Chi Square Value (34.96, α) | 22.44 | Adjusted Chi Square Value (34.96, β) | 22.33 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.502 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.504 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 0.145 |
| Maximum | 9.8 | Median | 0.01 |
| SD | 0.889 | CV | 6.138 |
| k hat (MLE) | 0.294 | k star (bias corrected MLE) | 0.292 |
| Theta hat (MLE) | 0.494 | Theta star (bias corrected MLE) | 0.496 |
| nu hat (MLE) | 79.27 | nu star (bias corrected) | 78.84 |
| MLE Mean (bias corrected) | 0.145 | MLE Sd (bias corrected) | 0.268 |
| | | Adjusted Level of Significance (β) | 0.0482 |

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (78.84, α) | 59.38 | Adjusted Chi Square Value (78.84, β) | 59.2 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.192 | 95% Gamma Adjusted UCL (use when n<50) | 0.193 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.907 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.829 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.184 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.295 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.173 | Mean in Log Scale | -3.272 |
| SD in Original Scale | 0.886 | SD in Log Scale | 1.22 |
| 95% t UCL (assumes normality of ROS data) | 0.299 | 95% Percentile Bootstrap UCL | 0.313 |
| 95% BCA Bootstrap UCL | 0.38 | 95% Bootstrap t UCL | 0.64 |
| 95% H-UCL (Log ROS) | 0.103 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -1.648 | 95% H-UCL (KM -Log) | 0.27 |
| KM SD (logged) | 0.675 | 95% Critical H Value (KM-Log) | 1.935 |
| KM Standard Error of Mean (logged) | 0.0833 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 1.236 | Mean in Log Scale | -0.555 |
| SD in Original Scale | 1.608 | SD in Log Scale | 1.306 |
| 95% t UCL (Assumes normality) | 1.465 | 95% H-Stat UCL | 1.785 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.465 | 95% GROS Approximate Gamma UCL | 0.192 |
| 95% Approximate Gamma KM-UCL | 0.502 | | |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**VANADIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 135 | Number of Distinct Observations | 116 |
| | | Number of Missing Observations | 0 |
| Minimum | 1.5 | Mean | 23.52 |
| Maximum | 106 | Median | 20.4 |

| | | | |
|---|---|---|---|
| SD | 17.04 | Std. Error of Mean | 1.466 |
| Coefficient of Variation | 0.724 | Skewness | 1.276 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.909 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 2.43E-11 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.0981 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0763 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 25.95 | 95% Adjusted-CLT UCL (Chen-1995) | 26.1 |
| | | 95% Modified-t UCL (Johnson-1978) | 25.97 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.577 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.768 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.0597 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.0817 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.775 | k star (bias corrected MLE) | 1.74 |
| Theta hat (MLE) | 13.25 | Theta star (bias corrected MLE) | 13.51 |
| nu hat (MLE) | 479.2 | nu star (bias corrected) | 469.9 |
| MLE Mean (bias corrected) | 23.52 | MLE Sd (bias corrected) | 17.83 |
| | | Approximate Chi Square Value (0.05) | 420.6 |
| Adjusted Level of Significance | 0.0482 | Adjusted Chi Square Value | 420.1 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50) | 26.27 | 95% Adjusted Gamma UCL (use when n<50) | 26.31 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.948 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 1.18E-04 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.0897 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.0763 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 0.405 | Mean of logged Data | 2.85 |
| Maximum of Logged Data | 4.663 | SD of logged Data | 0.866 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 29.41 | 90% Chebyshev (MVUE) UCL | 31.57 |
| 95% Chebyshev (MVUE) UCL | 34.52 | 97.5% Chebyshev (MVUE) UCL | 38.6 |
| 99% Chebyshev (MVUE) UCL | 46.63 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 25.93 | 95% Jackknife UCL | 25.95 |
| 95% Standard Bootstrap UCL | 25.97 | 95% Bootstrap-t UCL | 26.15 |
| 95% Hall's Bootstrap UCL | 26.25 | 95% Percentile Bootstrap UCL | 25.85 |
| 95% BCA Bootstrap UCL | 26.06 | | |
| 90% Chebyshev(Mean, Sd) UCL | 27.92 | 95% Chebyshev(Mean, Sd) UCL | 29.91 |
| 97.5% Chebyshev(Mean, Sd) UCL | 32.68 | 99% Chebyshev(Mean, Sd) UCL | 38.11 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Approximate Gamma UCL | 26.27 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**AROCLOR-1254**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 111 | Number of Distinct Observations | 61 |
| | | Number of Missing Observations | 23 |
| Number of Detects | 46 | Number of Non-Detects | 65 |
| Number of Distinct Detects | 32 | Number of Distinct Non-Detects | 36 |
| Minimum Detect | 0.027 | Minimum Non-Detect | 0.019 |
| Maximum Detect | 0.505 | Maximum Non-Detect | 1.8 |
| Variance Detects | 0.0137 | Percent Non-Detects | 58.56% |
| Mean Detects | 0.275 | SD Detects | 0.117 |
| Median Detects | 0.3 | CV Detects | 0.426 |
| Skewness Detects | -0.348 | Kurtosis Detects | -0.794 |
| Mean of Logged Detects | -1.427 | SD of Logged Detects | 0.604 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.954 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.945 | Detected Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.117 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.131 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.139 | Standard Error of Mean | 0.015 |
| SD | 0.148 | 95% KM (BCA) UCL | 0.164 |
| 95% KM (t) UCL | 0.164 | 95% KM (Percentile Bootstrap) UCL | 0.163 |
| 95% KM (z) UCL | 0.163 | 95% KM Bootstrap t UCL | 0.165 |
| 90% KM Chebyshev UCL | 0.184 | 95% KM Chebyshev UCL | 0.204 |
| 97.5% KM Chebyshev UCL | 0.233 | 99% KM Chebyshev UCL | 0.288 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.545 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.753 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.184 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.131 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 3.846 | k star (bias corrected MLE) | 3.61 |
| Theta hat (MLE) | 0.0715 | Theta star (bias corrected MLE) | 0.0762 |
| nu hat (MLE) | 353.9 | nu star (bias corrected) | 332.1 |
| MLE Mean (bias corrected) | 0.275 | MLE Sd (bias corrected) | 0.145 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.877 | nu hat (KM) | 194.7 |
| Approximate Chi Square Value (194.65, α) | 163.4 | Adjusted Chi Square Value (194.65, β) | 163 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.165 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.166 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 0.163 |
| Maximum | 0.505 | Median | 0.114 |
| SD | 0.125 | CV | 0.765 |
| k hat (MLE) | 1.704 | k star (bias corrected MLE) | 1.664 |
| Theta hat (MLE) | 0.0955 | Theta star (bias corrected MLE) | 0.0978 |
| nu hat (MLE) | 378.3 | nu star (bias corrected) | 369.4 |
| MLE Mean (bias corrected) | 0.163 | MLE Sd (bias corrected) | 0.126 |
| | | Adjusted Level of Significance (β) | 0.0478 |
| Approximate Chi Square Value (369.40, α) | 325.9 | Adjusted Chi Square Value (369.40, β) | 325.3 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.184 | 95% Gamma Adjusted UCL (use when n<50) | 0.185 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.851 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.945 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.207 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.131 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.16 | Mean in Log Scale | -2.107 |
| SD in Original Scale | 0.124 | SD in Log Scale | 0.736 |
| 95% t UCL (assumes normality of ROS data) | 0.18 | 95% Percentile Bootstrap UCL | 0.179 |
| 95% BCA Bootstrap UCL | 0.181 | 95% Bootstrap t UCL | 0.181 |
| 95% H-UCL (Log ROS) | 0.183 | | |

**DL/2 Statistics**

| DL/2 Normal | | DL/2 Log-Transformed | |
|---|---|---|---|
| Mean in Original Scale | 0.173 | Mean in Log Scale | -2.493 |
| SD in Original Scale | 0.174 | SD in Log Scale | 1.408 |
| 95% t UCL (Assumes normality) | 0.201 | 95% H-Stat UCL | 0.317 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.164 | 95% KM (Percentile Bootstrap) UCL | 0.163 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**BENZO(A)ANTHRACENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 111 | Number of Distinct Observations | 73 |
| | | Number of Missing Observations | 23 |
| Number of Detects | 90 | Number of Non-Detects | 21 |
| Number of Distinct Detects | 66 | Number of Distinct Non-Detects | 12 |
| Minimum Detect | 0.012 | Minimum Non-Detect | 0.38 |
| Maximum Detect | 15 | Maximum Non-Detect | 0.61 |
| Variance Detects | 2.563 | Percent Non-Detects | 18.92% |
| Mean Detects | 0.628 | SD Detects | 1.601 |
| Median Detects | 0.375 | CV Detects | 2.549 |
| Skewness Detects | 8.352 | Kurtosis Detects | 75.02 |
| Mean of Logged Detects | -1.212 | SD of Logged Detects | 1.181 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.294 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.35 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0934 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.54 | Standard Error of Mean | 0.138 |
| SD | 1.446 | 95% KM (BCA) UCL | 0.803 |
| 95% KM (t) UCL | 0.769 | 95% KM (Percentile Bootstrap) UCL | 0.795 |
| 95% KM (z) UCL | 0.767 | 95% KM Bootstrap t UCL | 1.253 |
| 90% KM Chebyshev UCL | 0.954 | 95% KM Chebyshev UCL | 1.142 |
| 97.5% KM Chebyshev UCL | 1.402 | 99% KM Chebyshev UCL | 1.914 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.493 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.792 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.154 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.0978 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.795 | k star (bias corrected MLE) | 0.776 |
| Theta hat (MLE) | 0.79 | Theta star (bias corrected MLE) | 0.81 |
| nu hat (MLE) | 143.1 | nu star (bias corrected) | 139.6 |
| MLE Mean (bias corrected) | 0.628 | MLE Sd (bias corrected) | 0.713 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.139 | nu hat (KM) | 30.91 |
| Approximate Chi Square Value (30.91, α) | 19.21 | Adjusted Chi Square Value (30.91, β) | 19.09 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.868 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.874 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 0.513 |
| Maximum | 15 | Median | 0.2 |
| SD | 1.46 | CV | 2.848 |
| k hat (MLE) | 0.548 | k star (bias corrected MLE) | 0.539 |
| Theta hat (MLE) | 0.936 | Theta star (bias corrected MLE) | 0.951 |
| nu hat (MLE) | 121.6 | nu star (bias corrected) | 119.7 |
| MLE Mean (bias corrected) | 0.513 | MLE Sd (bias corrected) | 0.698 |
| | | Adjusted Level of Significance (β) | 0.0478 |
| Approximate Chi Square Value (119.66, α) | 95.4 | Adjusted Chi Square Value (119.66, β) | 95.12 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.643 | 95% Gamma Adjusted UCL (use when n<50) | 0.645 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.114 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0934 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data appear Approximate Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.536 | Mean in Log Scale | -1.361 |
| SD in Original Scale | 1.453 | SD in Log Scale | 1.117 |
| 95% t UCL (assumes normality of ROS data) | 0.765 | 95% Percentile Bootstrap UCL | 0.795 |
| 95% BCA Bootstrap UCL | 0.976 | 95% Bootstrap t UCL | 1.267 |
| 95% H-UCL (Log ROS) | 0.613 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -1.38 | 95% H-UCL (KM -Log) | 0.647 |

| | | | |
|---|---|---|---|
| KM SD (logged) | 1.166 | 95% Critical H Value (KM-Log) | 2.374 |
| KM Standard Error of Mean (logged) | 0.118 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.55 | Mean in Log Scale | -1.273 |
| SD in Original Scale | 1.449 | SD in Log Scale | 1.071 |
| 95% t UCL (Assumes normality) | 0.779 | 95% H-Stat UCL | 0.627 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (Chebyshev) UCL | 1.142 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**BENZO(A)PYRENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 111 | Number of Distinct Observations | 72 |
| | | Number of Missing Observations | 23 |
| Number of Detects | 89 | Number of Non-Detects | 22 |
| Number of Distinct Detects | 64 | Number of Distinct Non-Detects | 12 |
| Minimum Detect | 0.013 | Minimum Non-Detect | 0.38 |
| Maximum Detect | 11 | Maximum Non-Detect | 0.61 |
| Variance Detects | 1.538 | Percent Non-Detects | 19.82% |
| Mean Detects | 0.709 | SD Detects | 1.24 |
| Median Detects | 0.5 | CV Detects | 1.75 |
| Skewness Detects | 6.816 | Kurtosis Detects | 55.13 |
| Mean of Logged Detects | -0.989 | SD of Logged Detects | 1.187 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.436 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.287 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0939 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.602 | Standard Error of Mean | 0.108 |
| SD | 1.126 | 95% KM (BCA) UCL | 0.792 |
| 95% KM (t) UCL | 0.781 | 95% KM (Percentile Bootstrap) UCL | 0.804 |
| 95% KM (z) UCL | 0.779 | 95% KM Bootstrap t UCL | 0.981 |

| | | | |
|---|---|---|---|
| 90% KM Chebyshev UCL | 0.925 | 95% KM Chebyshev UCL | 1.071 |
| 97.5% KM Chebyshev UCL | 1.274 | 99% KM Chebyshev UCL | 1.673 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.287 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.787 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.112 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.0979 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.907 | k star (bias corrected MLE) | 0.884 |
| Theta hat (MLE) | 0.782 | Theta star (bias corrected MLE) | 0.802 |
| nu hat (MLE) | 161.4 | nu star (bias corrected) | 157.3 |
| MLE Mean (bias corrected) | 0.709 | MLE Sd (bias corrected) | 0.754 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.286 | nu hat (KM) | 63.6 |
| Approximate Chi Square Value (63.60, α) | 46.25 | Adjusted Chi Square Value (63.60, β) | 46.06 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.828 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.832 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 0.578 |
| Maximum | 11 | Median | 0.25 |
| SD | 1.141 | CV | 1.974 |
| k hat (MLE) | 0.622 | k star (bias corrected MLE) | 0.612 |
| Theta hat (MLE) | 0.928 | Theta star (bias corrected MLE) | 0.945 |
| nu hat (MLE) | 138.2 | nu star (bias corrected) | 135.8 |
| MLE Mean (bias corrected) | 0.578 | MLE Sd (bias corrected) | 0.739 |
| | | Adjusted Level of Significance (β) | 0.0478 |
| Approximate Chi Square Value (135.77, α) | 109.9 | Adjusted Chi Square Value (135.77, β) | 109.5 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.714 | 95% Gamma Adjusted UCL (use when n<50) | 0.716 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.125 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0939 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data appear Approximate Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.601 | Mean in Log Scale | -1.163 |
| SD in Original Scale | 1.131 | SD in Log Scale | 1.131 |
| 95% t UCL (assumes normality of ROS data) | 0.779 | 95% Percentile Bootstrap UCL | 0.788 |
| 95% BCA Bootstrap UCL | 0.917 | 95% Bootstrap t UCL | 0.965 |
| 95% H-UCL (Log ROS) | 0.762 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -1.188 | 95% H-UCL (KM -Log) | 0.804 |
| KM SD (logged) | 1.183 | 95% Critical H Value (KM-Log) | 2.391 |
| KM Standard Error of Mean (logged) | 0.12 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.611 | Mean in Log Scale | -1.097 |
| SD in Original Scale | 1.127 | SD in Log Scale | 1.086 |
| 95% t UCL (Assumes normality) | 0.789 | 95% H-Stat UCL | 0.764 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (Chebyshev) UCL | 1.071 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**BENZO(B)FLUORANTHENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 111 | Number of Distinct Observations | 72 |
| | | Number of Missing Observations | 23 |
| Number of Detects | 91 | Number of Non-Detects | 20 |
| Number of Distinct Detects | 65 | Number of Distinct Non-Detects | 10 |
| Minimum Detect | 0.006 | Minimum Non-Detect | 0.38 |
| Maximum Detect | 15 | Maximum Non-Detect | 0.61 |
| Variance Detects | 2.771 | Percent Non-Detects | 18.02% |
| Mean Detects | 0.873 | SD Detects | 1.665 |
| Median Detects | 0.48 | CV Detects | 1.906 |
| Skewness Detects | 7.127 | Kurtosis Detects | 59.06 |
| Mean of Logged Detects | -0.856 | SD of Logged Detects | 1.309 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.408 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.301 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0929 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.751 | Standard Error of Mean | 0.145 |
| SD | 1.522 | 95% KM (BCA) UCL | 1.016 |
| 95% KM (t) UCL | 0.992 | 95% KM (Percentile Bootstrap) UCL | 1.015 |

| | | | |
|---|---|---|---|
| 95% KM (z) UCL | 0.99 | 95% KM Bootstrap t UCL | 1.306 |
| 90% KM Chebyshev UCL | 1.187 | 95% KM Chebyshev UCL | 1.385 |
| 97.5% KM Chebyshev UCL | 1.659 | 99% KM Chebyshev UCL | 2.198 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.055 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.791 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.0931 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.0972 | Detected data appear Gamma Distributed at 5% Significance Level | |

**Detected data follow Appr. Gamma Distribution at 5% Significance Level**

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.821 | k star (bias corrected MLE) | 0.801 |
| Theta hat (MLE) | 1.064 | Theta star (bias corrected MLE) | 1.09 |
| nu hat (MLE) | 149.4 | nu star (bias corrected) | 145.8 |
| MLE Mean (bias corrected) | 0.873 | MLE Sd (bias corrected) | 0.976 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.243 | nu hat (KM) | 54.03 |
| Approximate Chi Square Value (54.03, α) | 38.14 | Adjusted Chi Square Value (54.03, β) | 37.96 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 1.064 | 95% Gamma Adjusted KM-UCL (use when n<50) | 1.069 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.006 | Mean | 0.722 |
| Maximum | 15 | Median | 0.35 |
| SD | 1.541 | CV | 2.135 |
| k hat (MLE) | 0.57 | k star (bias corrected MLE) | 0.561 |
| Theta hat (MLE) | 1.266 | Theta star (bias corrected MLE) | 1.288 |
| nu hat (MLE) | 126.5 | nu star (bias corrected) | 124.4 |
| MLE Mean (bias corrected) | 0.722 | MLE Sd (bias corrected) | 0.964 |
| | | Adjusted Level of Significance (β) | 0.0478 |
| Approximate Chi Square Value (124.44, α) | 99.67 | Adjusted Chi Square Value (124.44, β) | 99.38 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.901 | 95% Gamma Adjusted UCL (use when n<50) | 0.904 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.104 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0929 | Detected Data Not Lognormal at 5% Significance Level | |

**Detected Data Not Lognormal at 5% Significance Level**

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.746 | Mean in Log Scale | -1.038 |
| SD in Original Scale | 1.531 | SD in Log Scale | 1.258 |
| 95% t UCL (assumes normality of ROS data) | 0.987 | 95% Percentile Bootstrap UCL | 1.026 |
| 95% BCA Bootstrap UCL | 1.132 | 95% Bootstrap t UCL | 1.291 |
| 95% H-UCL (Log ROS) | 1.05 | | |

**DL/2 Statistics**

| DL/2 Normal | | DL/2 Log-Transformed | |
|---|---|---|---|
| Mean in Original Scale | 0.754 | Mean in Log Scale | -0.982 |
| SD in Original Scale | 1.527 | SD in Log Scale | 1.215 |
| 95% t UCL (Assumes normality) | 0.995 | 95% H-Stat UCL | 1.037 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (Chebyshev) UCL | 1.385 | 95% GROS Approximate Gamma UCL | 0.901 |
| 95% Approximate Gamma KM-UCL | 1.064 | | |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**BENZO(K)FLUORANTHENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 111 | Number of Distinct Observations | 75 |
| | | Number of Missing Observations | 23 |
| Number of Detects | 91 | Number of Non-Detects | 20 |
| Number of Distinct Detects | 69 | Number of Distinct Non-Detects | 10 |
| Minimum Detect | 0.006 | Minimum Non-Detect | 0.38 |
| Maximum Detect | 11 | Maximum Non-Detect | 0.61 |
| Variance Detects | 1.633 | Percent Non-Detects | 18.02% |
| Mean Detects | 0.838 | SD Detects | 1.278 |
| Median Detects | 0.56 | CV Detects | 1.524 |
| Skewness Detects | 5.952 | Kurtosis Detects | 45.16 |
| Mean of Logged Detects | -0.835 | SD of Logged Detects | 1.296 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.52 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.257 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0929 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.721 | Standard Error of Mean | 0.113 |
| SD | 1.178 | 95% KM (BCA) UCL | 0.934 |
| 95% KM (t) UCL | 0.908 | 95% KM (Percentile Bootstrap) UCL | 0.926 |
| 95% KM (z) UCL | 0.907 | 95% KM Bootstrap t UCL | 1.051 |
| 90% KM Chebyshev UCL | 1.059 | 95% KM Chebyshev UCL | 1.212 |
| 97.5% KM Chebyshev UCL | 1.425 | 99% KM Chebyshev UCL | 1.842 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.657 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.788 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.0765 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.0969 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.888 | k star (bias corrected MLE) | 0.866 |
| Theta hat (MLE) | 0.944 | Theta star (bias corrected MLE) | 0.968 |
| nu hat (MLE) | 161.7 | nu star (bias corrected) | 157.7 |
| MLE Mean (bias corrected) | 0.838 | MLE Sd (bias corrected) | 0.901 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.375 | nu hat (KM) | 83.18 |
| Approximate Chi Square Value (83.18, α) | 63.16 | Adjusted Chi Square Value (83.18, β) | 62.93 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.95 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.953 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.006 | Mean | 0.698 |
| Maximum | 11 | Median | 0.34 |
| SD | 1.195 | CV | 1.712 |
| k hat (MLE) | 0.634 | k star (bias corrected MLE) | 0.623 |
| Theta hat (MLE) | 1.1 | Theta star (bias corrected MLE) | 1.12 |
| nu hat (MLE) | 140.8 | nu star (bias corrected) | 138.3 |
| MLE Mean (bias corrected) | 0.698 | MLE Sd (bias corrected) | 0.884 |
| | | Adjusted Level of Significance (β) | 0.0478 |
| Approximate Chi Square Value (138.34, α) | 112.2 | Adjusted Chi Square Value (138.34, β) | 111.9 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.861 | 95% Gamma Adjusted UCL (use when n<50) | 0.863 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.113 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0929 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.717 | Mean in Log Scale | -1.024 |
| SD in Original Scale | 1.185 | SD in Log Scale | 1.251 |
| 95% t UCL (assumes normality of ROS data) | 0.903 | 95% Percentile Bootstrap UCL | 0.91 |
| 95% BCA Bootstrap UCL | 0.981 | 95% Bootstrap t UCL | 1.058 |
| 95% H-UCL (Log ROS) | 1.053 | | |

**DL/2 Statistics**

**DL/2 Normal** **DL/2 Log-Transformed**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.726 | Mean in Log Scale | -0.965 |
| SD in Original Scale | 1.181 | SD in Log Scale | 1.205 |
| 95% t UCL (Assumes normality) | 0.911 | 95% H-Stat UCL | 1.039 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Gamma Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (Chebyshev) UCL | 1.212 | 95% GROS Approximate Gamma UCL | 0.861 |
| 95% Approximate Gamma KM-UCL | 0.95 | | |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**DIBENZO(A,H)ANTHRACENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 111 | Number of Distinct Observations | 68 |
| | | Number of Missing Observations | 23 |
| Number of Detects | 51 | Number of Non-Detects | 60 |
| Number of Distinct Detects | 37 | Number of Distinct Non-Detects | 32 |
| Minimum Detect | 0.011 | Minimum Non-Detect | 0.38 |
| Maximum Detect | 1.4 | Maximum Non-Detect | 2.8 |
| Variance Detects | 0.0452 | Percent Non-Detects | 54.05% |
| Mean Detects | 0.145 | SD Detects | 0.213 |
| Median Detects | 0.11 | CV Detects | 1.47 |
| Skewness Detects | 4.583 | Kurtosis Detects | 25.17 |
| Mean of Logged Detects | -2.476 | SD of Logged Detects | 1.03 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.534 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.265 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.124 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.13 | Standard Error of Mean | 0.0198 |
| SD | 0.17 | 95% KM (BCA) UCL | 0.162 |
| 95% KM (t) UCL | 0.163 | 95% KM (Percentile Bootstrap) UCL | 0.165 |
| 95% KM (z) UCL | 0.162 | 95% KM Bootstrap t UCL | 0.179 |
| 90% KM Chebyshev UCL | 0.189 | 95% KM Chebyshev UCL | 0.216 |
| 97.5% KM Chebyshev UCL | 0.253 | 99% KM Chebyshev UCL | 0.327 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.126 | **Anderson-Darling GOF Test** | |

| | | | |
|---|---|---|---|
| 5% A-D Critical Value | 0.778 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.116 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.128 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data follow Appr. Gamma Distribution at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.056 | k star (bias corrected MLE) | 1.007 |
| Theta hat (MLE) | 0.137 | Theta star (bias corrected MLE) | 0.144 |
| nu hat (MLE) | 107.7 | nu star (bias corrected) | 102.7 |
| MLE Mean (bias corrected) | 0.145 | MLE Sd (bias corrected) | 0.144 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.583 | nu hat (KM) | 129.5 |
| Approximate Chi Square Value (129.50, α) | 104.2 | Adjusted Chi Square Value (129.50, β) | 103.9 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.161 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.162 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 0.117 |
| Maximum | 1.4 | Median | 0.0816 |
| SD | 0.154 | CV | 1.312 |
| k hat (MLE) | 1.215 | k star (bias corrected MLE) | 1.189 |
| Theta hat (MLE) | 0.0965 | Theta star (bias corrected MLE) | 0.0987 |
| nu hat (MLE) | 269.8 | nu star (bias corrected) | 263.9 |
| MLE Mean (bias corrected) | 0.117 | MLE Sd (bias corrected) | 0.108 |
| | | Adjusted Level of Significance (β) | 0.0478 |
| Approximate Chi Square Value (263.88, α) | 227.3 | Adjusted Chi Square Value (263.88, β) | 226.8 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.136 | 95% Gamma Adjusted UCL (use when n<50) | 0.137 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.131 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.124 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data appear Approximate Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.114 | Mean in Log Scale | -2.51 |
| SD in Original Scale | 0.149 | SD in Log Scale | 0.778 |
| 95% t UCL (assumes normality of ROS data) | 0.138 | 95% Percentile Bootstrap UCL | 0.141 |
| 95% BCA Bootstrap UCL | 0.152 | 95% Bootstrap t UCL | 0.16 |
| 95% H-UCL (Log ROS) | 0.128 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -2.517 | 95% H-UCL (KM -Log) | 0.16 |
| KM SD (logged) | 0.977 | 95% Critical H Value (KM-Log) | 2.193 |
| KM Standard Error of Mean (logged) | 0.135 | | |

**DL/2 Statistics**

| DL/2 Normal | | DL/2 Log-Transformed | |
|---|---|---|---|
| Mean in Original Scale | 0.386 | Mean in Log Scale | -1.569 |
| SD in Original Scale | 0.408 | SD in Log Scale | 1.222 |
| 95% t UCL (Assumes normality) | 0.45 | 95% H-Stat UCL | 0.583 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.163 | 95% GROS Approximate Gamma UCL | 0.136 |
| 95% Approximate Gamma KM-UCL | 0.161 | | |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**INDENO(1,2,3-CD)PYRENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 111 | Number of Distinct Observations | 68 |
| | | Number of Missing Observations | 23 |
| Number of Detects | 84 | Number of Non-Detects | 27 |
| Number of Distinct Detects | 58 | Number of Distinct Non-Detects | 16 |
| Minimum Detect | 0.006 | Minimum Non-Detect | 0.38 |
| Maximum Detect | 3.2 | Maximum Non-Detect | 2.8 |
| Variance Detects | 0.145 | Percent Non-Detects | 24.32% |
| Mean Detects | 0.298 | SD Detects | 0.381 |
| Median Detects | 0.235 | CV Detects | 1.279 |
| Skewness Detects | 5.498 | Kurtosis Detects | 40.8 |
| Mean of Logged Detects | -1.731 | SD of Logged Detects | 1.1 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.571 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.222 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0967 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.269 | Standard Error of Mean | 0.0334 |
| SD | 0.341 | 95% KM (BCA) UCL | 0.329 |
| 95% KM (t) UCL | 0.325 | 95% KM (Percentile Bootstrap) UCL | 0.325 |
| 95% KM (z) UCL | 0.324 | 95% KM Bootstrap t UCL | 0.351 |
| 90% KM Chebyshev UCL | 0.37 | 95% KM Chebyshev UCL | 0.415 |
| 97.5% KM Chebyshev UCL | 0.478 | 99% KM Chebyshev UCL | 0.602 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.273 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.78 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.116 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.1 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.099 | k star (bias corrected MLE) | 1.067 |
| Theta hat (MLE) | 0.271 | Theta star (bias corrected MLE) | 0.279 |
| nu hat (MLE) | 184.6 | nu star (bias corrected) | 179.3 |
| MLE Mean (bias corrected) | 0.298 | MLE Sd (bias corrected) | 0.288 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.625 | nu hat (KM) | 138.8 |
| Approximate Chi Square Value (138.83, α) | 112.6 | Adjusted Chi Square Value (138.83, β) | 112.3 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.332 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.333 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.006 | Mean | 0.258 |
| Maximum | 3.2 | Median | 0.174 |
| SD | 0.34 | CV | 1.318 |
| k hat (MLE) | 1.141 | k star (bias corrected MLE) | 1.116 |
| Theta hat (MLE) | 0.226 | Theta star (bias corrected MLE) | 0.231 |
| nu hat (MLE) | 253.2 | nu star (bias corrected) | 247.7 |
| MLE Mean (bias corrected) | 0.258 | MLE Sd (bias corrected) | 0.244 |
| | | Adjusted Level of Significance (β) | 0.0478 |
| Approximate Chi Square Value (247.70, α) | 212.3 | Adjusted Chi Square Value (247.70, β) | 211.8 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.301 | 95% Gamma Adjusted UCL (use when n<50) | 0.302 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.126 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0967 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.258 | Mean in Log Scale | -1.818 |
| SD in Original Scale | 0.339 | SD in Log Scale | 0.986 |
| 95% t UCL (assumes normality of ROS data) | 0.311 | 95% Percentile Bootstrap UCL | 0.313 |
| 95% BCA Bootstrap UCL | 0.338 | 95% Bootstrap t UCL | 0.35 |
| 95% H-UCL (Log ROS) | 0.325 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.301 | Mean in Log Scale | -1.636 |

| | | | |
|---|---|---|---|
| SD in Original Scale | 0.357 | SD in Log Scale | 1.001 |
| 95% t UCL (Assumes normality) | 0.358 | 95% H-Stat UCL | 0.397 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (Chebyshev) UCL | 0.415 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

| Analyte | Exp Area | Matrix | Valid Obs | Rec. UCL | Method | Max | EPC=Max |
|---|---|---|---|---|---|---|---|
| ALUMINUM | SL | Sediment | 33 | 2991 | 95% Adjusted Gamma UCL | 10900 | FALSE |
| ANTIMONY | SL | Sediment | 33 | 2.3 | 95% KM (t) UCL | 3.6 | FALSE |
| ARSENIC | SL | Sediment | 33 | 9.8 | 95% KM (Chebyshev) UCL | 28 | FALSE |
| CHROMIUM | SL | Sediment | 33 | 16 | 95% Adjusted Gamma UCL | 53 | FALSE |
| COBALT | SL | Sediment | 33 | 6.2 | 95% KM (Chebyshev) UCL | 15 | FALSE |
| COPPER | SL | Sediment | 33 | 101 | 95% Chebyshev (Mean, Sd) UCL | 360 | FALSE |
| CYANIDE | SL | Sediment | 33 | 2.7 | 97.5% KM (Chebyshev) UCL | 7.9 | FALSE |
| IRON | SL | Sediment | 33 | 8020 | 95% Adjusted Gamma UCL | 22000 | FALSE |
| LEAD | SL | Sediment | 33 | 406 | 95% Chebyshev (Mean, Sd) UCL | 1630 | FALSE |
| MANGANESE | SL | Sediment | 33 | 109 | 95% Adjusted Gamma UCL | 397 | FALSE |
| THALLIUM | SL | Sediment | 33 | 0.86 | 95% KM (t) UCL | 6.4 | FALSE |
| AROCLOR-1254 | SL | Sediment | 33 | 0.065 | 95% KM (t) UCL | 0.23 | FALSE |
| BENZO(A)ANTHRACENE | SL | Sediment | 33 | 20 | 99% KM (Chebyshev) UCL | 57 | FALSE |
| BENZO(A)PYRENE | SL | Sediment | 33 | 15 | 97.5% Chebyshev (Mean, Sd) UCL | 63 | FALSE |
| BENZO(B)FLUORANTHENE | SL | Sediment | 33 | 30 | 97.5% Chebyshev (Mean, Sd) UCL | 130 | FALSE |
| BENZO(K)FLUORANTHENE | SL | Sediment | 33 | 6.3 | 99% KM (Chebyshev) UCL | 16 | FALSE |
| CHRYSENE | SL | Sediment | 33 | 30 | 99% KM (Chebyshev) UCL | 86 | FALSE |
| DIBENZO(A,H)ANTHRACENE | SL | Sediment | 33 | 1.5 | 99% KM (Chebyshev) UCL | 4.1 | FALSE |
| INDENO(1,2,3-CD)PYRENE | SL | Sediment | 33 | 4.1 | 99% KM (Chebyshev) UCL | 11 | FALSE |
| (TIC) BENZO_J_FLUORANTHENE | SL | Sediment | 3 | 15 | 95% Student's-t UCL | 12 | TRUE |

SD_SL_7.10.17.xlsx

## UCL Statistics for Data Sets with Non-Detects

| | |
|---|---|
| User Selected Options | |
| Date/Time of Computation | 7/10/2017 11:11:17 AM |
| From File | SD_SL_7.10.17.xlsx |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Number of Bootstrap Operations | 2000 |

## ALUMINUM

### General Statistics

| | | | |
|---|---|---|---|
| Total Number of Observations | 33 | Number of Distinct Observations | 33 |
| | | Number of Missing Observations | 0 |
| Minimum | 121 | Mean | 2301 |
| Maximum | 10900 | Median | 1870 |
| SD | 2003 | Std. Error of Mean | 348.6 |
| Coefficient of Variation | 0.87 | Skewness | 2.63 |

### Normal GOF Test

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.774 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.931 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.177 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.154 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

### Assuming Normal Distribution

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 2891 | 95% Adjusted-CLT UCL (Chen-1995) | 3045 |
| | | 95% Modified-t UCL (Johnson-1978) | 2918 |

### Gamma GOF Test

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.29 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.763 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.0976 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.156 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

### Gamma Statistics

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.644 | k star (bias corrected MLE) | 1.515 |
| Theta hat (MLE) | 1400 | Theta star (bias corrected MLE) | 1519 |
| nu hat (MLE) | 108.5 | nu star (bias corrected) | 99.98 |
| MLE Mean (bias corrected) | 2301 | MLE Sd (bias corrected) | 1869 |
| | | Approximate Chi Square Value (0.05) | 77.91 |
| Adjusted Level of Significance | 0.0419 | Adjusted Chi Square Value | 76.91 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50) | 2953 | 95% Adjusted Gamma UCL (use when n<50) | 2991 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.954 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.931 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.148 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.154 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 4.796 | Mean of logged Data | 7.407 |
| Maximum of Logged Data | 9.297 | SD of logged Data | 0.908 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 3617 | 90% Chebyshev (MVUE) UCL | 3758 |
| 95% Chebyshev (MVUE) UCL | 4352 | 97.5% Chebyshev (MVUE) UCL | 5177 |
| 99% Chebyshev (MVUE) UCL | 6798 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 2874 | 95% Jackknife UCL | 2891 |
| 95% Standard Bootstrap UCL | 2858 | 95% Bootstrap-t UCL | 3214 |
| 95% Hall's Bootstrap UCL | 5554 | 95% Percentile Bootstrap UCL | 2888 |
| 95% BCA Bootstrap UCL | 3123 | | |
| 90% Chebyshev(Mean, Sd) UCL | 3347 | 95% Chebyshev(Mean, Sd) UCL | 3820 |
| 97.5% Chebyshev(Mean, Sd) UCL | 4478 | 99% Chebyshev(Mean, Sd) UCL | 5769 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Adjusted Gamma UCL | 2991 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**ANTIMONY**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 33 | Number of Distinct Observations | 27 |
| Number of Detects | 9 | Number of Non-Detects | 24 |
| Number of Distinct Detects | 8 | Number of Distinct Non-Detects | 19 |
| Minimum Detect | 0.84 | Minimum Non-Detect | 5.4 |
| Maximum Detect | 3.6 | Maximum Non-Detect | 19.75 |
| Variance Detects | 0.907 | Percent Non-Detects | 72.73% |
| Mean Detects | 1.724 | SD Detects | 0.952 |

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| | | | |
|---|---|---|---|
| Median Detects | 1.5 | CV Detects | 0.552 |
| Skewness Detects | 1.317 | Kurtosis Detects | 0.734 |
| Mean of Logged Detects | 0.428 | SD of Logged Detects | 0.498 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.827 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.829 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.288 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.295 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Approximate Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 1.724 | Standard Error of Mean | 0.317 |
| SD | 0.898 | 95% KM (BCA) UCL | 2.242 |
| 95% KM (t) UCL | 2.262 | 95% KM (Percentile Bootstrap) UCL | 2.278 |
| 95% KM (z) UCL | 2.247 | 95% KM Bootstrap t UCL | 3.108 |
| 90% KM Chebyshev UCL | 2.677 | 95% KM Chebyshev UCL | 3.108 |
| 97.5% KM Chebyshev UCL | 3.707 | 99% KM Chebyshev UCL | 4.883 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.477 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.724 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.226 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.28 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 4.421 | k star (bias corrected MLE) | 3.021 |
| Theta hat (MLE) | 0.39 | Theta star (bias corrected MLE) | 0.571 |
| nu hat (MLE) | 79.58 | nu star (bias corrected) | 54.39 |
| MLE Mean (bias corrected) | 1.724 | MLE Sd (bias corrected) | 0.992 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 3.688 | nu hat (KM) | 243.4 |
| Approximate Chi Square Value (243.42, α) | 208.3 | Adjusted Chi Square Value (243.42, β) | 206.6 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 2.015 | 95% Gamma Adjusted KM-UCL (use when n<50) | 2.031 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.84 | Mean | 1.657 |
| Maximum | 3.6 | Median | 1.618 |
| SD | 0.545 | CV | 0.329 |
| k hat (MLE) | 11.28 | k star (bias corrected MLE) | 10.28 |
| Theta hat (MLE) | 0.147 | Theta star (bias corrected MLE) | 0.161 |
| nu hat (MLE) | 744.7 | nu star (bias corrected) | 678.4 |

GRADIENT

| | | | |
|---|---|---|---|
| MLE Mean (bias corrected) | 1.657 | MLE Sd (bias corrected) | 0.517 |
| | | Adjusted Level of Significance (β) | 0.0419 |
| Approximate Chi Square Value (678.37, α) | 618.9 | Adjusted Chi Square Value (678.37, β) | 616 |
| 95% Gamma Approximate UCL (use when n>=50) | 1.816 | 95% Gamma Adjusted UCL (use when n<50) | 1.825 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.92 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.829 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.196 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.295 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 1.6 | Mean in Log Scale | 0.428 |
| SD in Original Scale | 0.53 | SD in Log Scale | 0.286 |
| 95% t UCL (assumes normality of ROS data) | 1.757 | 95% Percentile Bootstrap UCL | 1.761 |
| 95% BCA Bootstrap UCL | 1.797 | 95% Bootstrap t UCL | 1.846 |
| 95% H-UCL (Log ROS) | 1.749 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | 0.428 | 95% H-UCL (KM -Log) | 2.006 |
| KM SD (logged) | 0.469 | 95% Critical H Value (KM-Log) | 1.912 |
| KM Standard Error of Mean (logged) | 0.166 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 3.22 | Mean in Log Scale | 1.043 |
| SD in Original Scale | 1.711 | SD in Log Scale | 0.527 |
| 95% t UCL (Assumes normality) | 3.725 | 95% H-Stat UCL | 3.914 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 2.262 | 95% KM (Percentile Bootstrap) UCL | 2.278 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**ARSENIC**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 33 | Number of Distinct Observations | 29 |
| Number of Detects | 30 | Number of Non-Detects | 3 |
| Number of Distinct Detects | 27 | Number of Distinct Non-Detects | 3 |

| | | | |
|---|---|---|---|
| Minimum Detect | 0.68 | Minimum Non-Detect | 0.92 |
| Maximum Detect | 28.1 | Maximum Non-Detect | 1 |
| Variance Detects | 36.96 | Percent Non-Detects | 9.09% |
| Mean Detects | 5.761 | SD Detects | 6.08 |
| Median Detects | 3.35 | CV Detects | 1.055 |
| Skewness Detects | 2.002 | Kurtosis Detects | 5.129 |
| Mean of Logged Detects | 1.24 | SD of Logged Detects | 1.066 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.786 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.927 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.202 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.162 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 5.307 | Standard Error of Mean | 1.041 |
| SD | 5.877 | 95% KM (BCA) UCL | 7.4 |
| 95% KM (t) UCL | 7.07 | 95% KM (Percentile Bootstrap) UCL | 7.052 |
| 95% KM (z) UCL | 7.019 | 95% KM Bootstrap t UCL | 7.823 |
| 90% KM Chebyshev UCL | 8.429 | 95% KM Chebyshev UCL | 9.843 |
| 97.5% KM Chebyshev UCL | 11.81 | 99% KM Chebyshev UCL | 15.66 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.493 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.773 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.114 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.164 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.115 | k star (bias corrected MLE) | 1.026 |
| Theta hat (MLE) | 5.167 | Theta star (bias corrected MLE) | 5.616 |
| nu hat (MLE) | 66.9 | nu star (bias corrected) | 61.54 |
| MLE Mean (bias corrected) | 5.761 | MLE Sd (bias corrected) | 5.688 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.816 | nu hat (KM) | 53.83 |
| Approximate Chi Square Value (53.83, α) | 37.97 | Adjusted Chi Square Value (53.83, β) | 37.29 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 7.524 | 95% Gamma Adjusted KM-UCL (use when n<50) | 7.662 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 5.238 |
| Maximum | 28.1 | Median | 3.2 |

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| | | | |
|---|---|---|---|
| SD | 6.026 | CV | 1.151 |
| k hat (MLE) | 0.645 | k star (bias corrected MLE) | 0.607 |
| Theta hat (MLE) | 8.118 | Theta star (bias corrected MLE) | 8.632 |
| nu hat (MLE) | 42.58 | nu star (bias corrected) | 40.05 |
| MLE Mean (bias corrected) | 5.238 | MLE Sd (bias corrected) | 6.724 |
| | | Adjusted Level of Significance (β) | 0.0419 |
| Approximate Chi Square Value (40.05, α) | 26.55 | Adjusted Chi Square Value (40.05, β) | 25.98 |
| 95% Gamma Approximate UCL (use when n>=50) | 7.901 | 95% Gamma Adjusted UCL (use when n<50) | 8.074 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.952 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.927 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.103 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.162 | Detected Data appear Lognormal at 5% Significance Level | |

**Detected Data appear Lognormal at 5% Significance Level**

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 5.304 | Mean in Log Scale | 1.099 |
| SD in Original Scale | 5.971 | SD in Log Scale | 1.112 |
| 95% t UCL (assumes normality of ROS data) | 7.064 | 95% Percentile Bootstrap UCL | 7.152 |
| 95% BCA Bootstrap UCL | 7.503 | 95% Bootstrap t UCL | 7.454 |
| 95% H-UCL (Log ROS) | 9.237 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | 1.103 | 95% H-UCL (KM -Log) | 8.912 |
| KM SD (logged) | 1.09 | 95% Critical H Value (KM-Log) | 2.548 |
| KM Standard Error of Mean (logged) | 0.193 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 5.28 | Mean in Log Scale | 1.06 |
| SD in Original Scale | 5.99 | SD in Log Scale | 1.168 |
| 95% t UCL (Assumes normality) | 7.047 | 95% H-Stat UCL | 9.86 |

**DL/2 is not a recommended method, provided for comparisons and historical reasons**

**Nonparametric Distribution Free UCL Statistics**

**Detected Data appear Gamma Distributed at 5% Significance Level**

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (Chebyshev) UCL | 9.843 | 95% GROS Adjusted Gamma UCL | 8.074 |
| 95% Adjusted Gamma KM-UCL | 7.662 | | |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

## CHROMIUM

### General Statistics

| | | | |
|---|---|---|---|
| Total Number of Observations | 33 | Number of Distinct Observations | 32 |
| | | Number of Missing Observations | 0 |
| Minimum | 1.3 | Mean | 12.17 |
| Maximum | 52.5 | Median | 7.1 |
| SD | 10.93 | Std. Error of Mean | 1.903 |
| Coefficient of Variation | 0.898 | Skewness | 1.878 |

### Normal GOF Test

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.82 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.931 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.194 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.154 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

### Assuming Normal Distribution

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 15.39 | 95% Adjusted-CLT UCL (Chen-1995) | 15.96 |
| | | 95% Modified-t UCL (Johnson-1978) | 15.49 |

### Gamma GOF Test

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.397 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.765 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.142 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.156 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

### Gamma Statistics

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.511 | k star (bias corrected MLE) | 1.394 |
| Theta hat (MLE) | 8.053 | Theta star (bias corrected MLE) | 8.73 |
| nu hat (MLE) | 99.71 | nu star (bias corrected) | 91.98 |
| MLE Mean (bias corrected) | 12.17 | MLE Sd (bias corrected) | 10.31 |
| | | Approximate Chi Square Value (0.05) | 70.86 |
| Adjusted Level of Significance | 0.0419 | Adjusted Chi Square Value | 69.91 |

### Assuming Gamma Distribution

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50) | 15.79 | 95% Adjusted Gamma UCL (use when n<50) | 16.01 |

### Lognormal GOF Test

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.978 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.931 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.0932 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.154 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 0.262 | Mean of logged Data | 2.133 |
| Maximum of Logged Data | 3.961 | SD of logged Data | 0.9 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 18.31 | 90% Chebyshev (MVUE) UCL | 19.05 |
| 95% Chebyshev (MVUE) UCL | 22.04 | 97.5% Chebyshev (MVUE) UCL | 26.2 |
| 99% Chebyshev (MVUE) UCL | 34.36 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 15.3 | 95% Jackknife UCL | 15.39 |
| 95% Standard Bootstrap UCL | 15.28 | 95% Bootstrap-t UCL | 16.38 |
| 95% Hall's Bootstrap UCL | 17.05 | 95% Percentile Bootstrap UCL | 15.4 |
| 95% BCA Bootstrap UCL | 15.65 | | |
| 90% Chebyshev(Mean, Sd) UCL | 17.87 | 95% Chebyshev(Mean, Sd) UCL | 20.46 |
| 97.5% Chebyshev(Mean, Sd) UCL | 24.05 | 99% Chebyshev(Mean, Sd) UCL | 31.1 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Adjusted Gamma UCL | 16.01 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**COBALT**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 33 | Number of Distinct Observations | 31 |
| Number of Detects | 29 | Number of Non-Detects | 4 |
| Number of Distinct Detects | 27 | Number of Distinct Non-Detects | 4 |
| Minimum Detect | 0.15 | Minimum Non-Detect | 4.5 |
| Maximum Detect | 15.1 | Maximum Non-Detect | 4.9 |
| Variance Detects | 16.1 | Percent Non-Detects | 12.12% |
| Mean Detects | 3.469 | SD Detects | 4.012 |
| Median Detects | 2 | CV Detects | 1.157 |
| Skewness Detects | 1.533 | Kurtosis Detects | 1.62 |
| Mean of Logged Detects | 0.51 | SD of Logged Detects | 1.346 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.788 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.926 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.241 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.165 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

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**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 3.229 | Standard Error of Mean | 0.674 |
| SD | 3.775 | 95% KM (BCA) UCL | 4.519 |
| 95% KM (t) UCL | 4.37 | 95% KM (Percentile Bootstrap) UCL | 4.326 |
| 95% KM (z) UCL | 4.337 | 95% KM Bootstrap t UCL | 4.72 |
| 90% KM Chebyshev UCL | 5.25 | 95% KM Chebyshev UCL | 6.165 |
| 97.5% KM Chebyshev UCL | 7.436 | 99% KM Chebyshev UCL | 9.932 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.405 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.781 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.102 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.169 | Detected data appear Gamma Distributed at 5% Significance Level | |

**Detected data appear Gamma Distributed at 5% Significance Level**

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.808 | k star (bias corrected MLE) | 0.747 |
| Theta hat (MLE) | 4.294 | Theta star (bias corrected MLE) | 4.642 |
| nu hat (MLE) | 46.86 | nu star (bias corrected) | 43.35 |
| MLE Mean (bias corrected) | 3.469 | MLE Sd (bias corrected) | 4.013 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.731 | nu hat (KM) | 48.27 |
| Approximate Chi Square Value (48.27, α) | 33.32 | Adjusted Chi Square Value (48.27, β) | 32.68 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 4.677 | 95% Gamma Adjusted KM-UCL (use when n<50) | 4.768 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.15 | Mean | 3.194 |
| Maximum | 15.1 | Median | 1.365 |
| SD | 3.828 | CV | 1.199 |
| k hat (MLE) | 0.852 | k star (bias corrected MLE) | 0.795 |
| Theta hat (MLE) | 3.749 | Theta star (bias corrected MLE) | 4.019 |
| nu hat (MLE) | 56.22 | nu star (bias corrected) | 52.44 |
| MLE Mean (bias corrected) | 3.194 | MLE Sd (bias corrected) | 3.583 |
| | | Adjusted Level of Significance (β) | 0.0419 |
| Approximate Chi Square Value (52.44, α) | 36.81 | Adjusted Chi Square Value (52.44, β) | 36.13 |
| 95% Gamma Approximate UCL (use when n>=50) | 4.55 | 95% Gamma Adjusted UCL (use when n<50) | 4.635 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.96 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.926 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.0823 | **Lilliefors GOF Test** | |

| | | | |
|---|---|---|---|
| 5% Lilliefors Critical Value | 0.165 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 3.177 | Mean in Log Scale | 0.455 |
| SD in Original Scale | 3.837 | SD in Log Scale | 1.268 |
| 95% t UCL (assumes normality of ROS data) | 4.308 | 95% Percentile Bootstrap UCL | 4.28 |
| 95% BCA Bootstrap UCL | 4.591 | 95% Bootstrap t UCL | 4.679 |
| 95% H-UCL (Log ROS) | 6.578 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | 0.444 | 95% H-UCL (KM -Log) | 6.982 |
| KM SD (logged) | 1.302 | 95% Critical H Value (KM-Log) | 2.829 |
| KM Standard Error of Mean (logged) | 0.241 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 3.332 | Mean in Log Scale | 0.551 |
| SD in Original Scale | 3.772 | SD in Log Scale | 1.264 |
| 95% t UCL (Assumes normality) | 4.444 | 95% H-Stat UCL | 7.183 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Gamma Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (Chebyshev) UCL | 6.165 | 95% GROS Adjusted Gamma UCL | 4.635 |
| 95% Adjusted Gamma KM-UCL | 4.768 | | |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

## COPPER

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 33 | Number of Distinct Observations | 31 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.34 | Mean | 41.03 |
| Maximum | 360 | Median | 9.8 |
| SD | 79.37 | Std. Error of Mean | 13.82 |
| Coefficient of Variation | 1.934 | Skewness | 2.834 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.565 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.931 | Data Not Normal at 5% Significance Level | |

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| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.36 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.154 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 64.44 | 95% Adjusted-CLT UCL (Chen-1995) | 71.04 |
| | | 95% Modified-t UCL (Johnson-1978) | 65.58 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.292 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.827 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.172 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.164 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.427 | k star (bias corrected MLE) | 0.408 |
| Theta hat (MLE) | 96.14 | Theta star (bias corrected MLE) | 100.5 |
| nu hat (MLE) | 28.17 | nu star (bias corrected) | 26.94 |
| MLE Mean (bias corrected) | 41.03 | MLE Sd (bias corrected) | 64.23 |
| | | Approximate Chi Square Value (0.05) | 16.11 |
| Adjusted Level of Significance | 0.0419 | Adjusted Chi Square Value | 15.67 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 68.64 | 95% Adjusted Gamma UCL (use when n<50) | 70.53 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.959 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.931 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.127 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.154 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -1.079 | Mean of logged Data | 2.189 |
| Maximum of Logged Data | 5.886 | SD of logged Data | 1.886 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 179.9 | 90% Chebyshev (MVUE) UCL | 107.9 |
| 95% Chebyshev (MVUE) UCL | 135.8 | 97.5% Chebyshev (MVUE) UCL | 174.5 |
| 99% Chebyshev (MVUE) UCL | 250.6 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 63.76 | 95% Jackknife UCL | 64.44 |

| | | | |
|---|---|---|---|
| 95% Standard Bootstrap UCL | 63.99 | 95% Bootstrap-t UCL | 80.85 |
| 95% Hall's Bootstrap UCL | 73.23 | 95% Percentile Bootstrap UCL | 65.98 |
| 95% BCA Bootstrap UCL | 73.34 | | |
| 90% Chebyshev(Mean, Sd) UCL | 82.49 | 95% Chebyshev(Mean, Sd) UCL | 101.3 |
| 97.5% Chebyshev(Mean, Sd) UCL | 127.3 | 99% Chebyshev(Mean, Sd) UCL | 178.5 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 101.3 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**CYANIDE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 33 | Number of Distinct Observations | 28 |
| Number of Detects | 23 | Number of Non-Detects | 10 |
| Number of Distinct Detects | 19 | Number of Distinct Non-Detects | 9 |
| Minimum Detect | 0.07 | Minimum Non-Detect | 2.7 |
| Maximum Detect | 7.9 | Maximum Non-Detect | 3.9 |
| Variance Detects | 3.707 | Percent Non-Detects | 30.30% |
| Mean Detects | 0.982 | SD Detects | 1.925 |
| Median Detects | 0.26 | CV Detects | 1.962 |
| Skewness Detects | 2.923 | Kurtosis Detects | 8.366 |
| Mean of Logged Detects | -1.041 | SD of Logged Detects | 1.268 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.508 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.914 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.369 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.185 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.817 | Standard Error of Mean | 0.297 |
| SD | 1.624 | 95% KM (BCA) UCL | 1.319 |
| 95% KM (t) UCL | 1.32 | 95% KM (Percentile Bootstrap) UCL | 1.343 |
| 95% KM (z) UCL | 1.305 | 95% KM Bootstrap t UCL | 1.927 |
| 90% KM Chebyshev UCL | 1.708 | 95% KM Chebyshev UCL | 2.112 |
| 97.5% KM Chebyshev UCL | 2.672 | 99% KM Chebyshev UCL | 3.773 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.574 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.796 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.333 | **Kolmogrov-Smirnoff GOF** | |

| | | | |
|---|---|---|---|
| 5% K-S Critical Value | 0.191 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.604 | k star (bias corrected MLE) | 0.554 |
| Theta hat (MLE) | 1.626 | Theta star (bias corrected MLE) | 1.772 |
| nu hat (MLE) | 27.77 | nu star (bias corrected) | 25.48 |
| MLE Mean (bias corrected) | 0.982 | MLE Sd (bias corrected) | 1.319 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.253 | nu hat (KM) | 16.69 |
| Approximate Chi Square Value (16.69, α) | 8.454 | Adjusted Chi Square Value (16.69, β) | 8.152 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 1.612 | 95% Gamma Adjusted KM-UCL (use when n<50) | 1.672 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 0.748 |
| Maximum | 7.9 | Median | 0.2 |
| SD | 1.64 | CV | 2.193 |
| k hat (MLE) | 0.609 | k star (bias corrected MLE) | 0.574 |
| Theta hat (MLE) | 1.229 | Theta star (bias corrected MLE) | 1.304 |
| nu hat (MLE) | 40.17 | nu star (bias corrected) | 37.85 |
| MLE Mean (bias corrected) | 0.748 | MLE Sd (bias corrected) | 0.987 |
| | | Adjusted Level of Significance (β) | 0.0419 |
| Approximate Chi Square Value (37.85, α) | 24.77 | Adjusted Chi Square Value (37.85, β) | 24.22 |
| 95% Gamma Approximate UCL (use when n>=50) | 1.143 | 95% Gamma Adjusted UCL (use when n<50) | 1.169 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.868 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.914 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.268 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.185 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.776 | Mean in Log Scale | -1.094 |
| SD in Original Scale | 1.628 | SD in Log Scale | 1.062 |
| 95% t UCL (assumes normality of ROS data) | 1.256 | 95% Percentile Bootstrap UCL | 1.264 |
| 95% BCA Bootstrap UCL | 1.47 | 95% Bootstrap t UCL | 2.245 |
| 95% H-UCL (Log ROS) | 0.943 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 1.168 | Mean in Log Scale | -0.585 |
| SD in Original Scale | 1.625 | SD in Log Scale | 1.266 |

| | | | |
|---|---|---|---|
| 95% t UCL (Assumes normality) | 1.647 | 95% H-Stat UCL | 2.31 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 97.5% KM (Chebyshev) UCL | 2.672 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**IRON**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 33 | Number of Distinct Observations | 33 |
| | | Number of Missing Observations | 0 |
| Minimum | 158 | Mean | 5783 |
| Maximum | 22000 | Median | 4170 |
| SD | 5095 | Std. Error of Mean | 886.9 |
| Coefficient of Variation | 0.881 | Skewness | 1.201 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.883 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.931 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.178 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.154 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
|---|---|---|---|
| 95% Student's-t UCL | 7285 | 95% Adjusted-CLT UCL (Chen-1995) | 7440 |
| | | 95% Modified-t UCL (Johnson-1978) | 7316 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.347 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.774 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.11 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.157 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.086 | k star (bias corrected MLE) | 1.008 |
| Theta hat (MLE) | 5324 | Theta star (bias corrected MLE) | 5739 |
| nu hat (MLE) | 71.69 | nu star (bias corrected) | 66.5 |

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| | | | |
|---|---|---|---|
| MLE Mean (bias corrected) | 5783 | MLE Sd (bias corrected) | 5761 |
| | | Approximate Chi Square Value (0.05) | 48.74 |
| Adjusted Level of Significance | 0.0419 | Adjusted Chi Square Value | 47.95 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50) | 7891 | 95% Adjusted Gamma UCL (use when n<50) | 8020 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.928 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.931 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.137 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.154 | Data appear Lognormal at 5% Significance Level | |

Data appear Approximate Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 5.063 | Mean of logged Data | 8.136 |
| Maximum of Logged Data | 9.999 | SD of logged Data | 1.23 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 13188 | 90% Chebyshev (MVUE) UCL | 12467 |
| 95% Chebyshev (MVUE) UCL | 14939 | 97.5% Chebyshev (MVUE) UCL | 18370 |
| 99% Chebyshev (MVUE) UCL | 25110 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 7242 | 95% Jackknife UCL | 7285 |
| 95% Standard Bootstrap UCL | 7198 | 95% Bootstrap-t UCL | 7499 |
| 95% Hall's Bootstrap UCL | 7555 | 95% Percentile Bootstrap UCL | 7249 |
| 95% BCA Bootstrap UCL | 7417 | | |
| 90% Chebyshev(Mean, Sd) UCL | 8444 | 95% Chebyshev(Mean, Sd) UCL | 9649 |
| 97.5% Chebyshev(Mean, Sd) UCL | 11321 | 99% Chebyshev(Mean, Sd) UCL | 14607 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Adjusted Gamma UCL | 8020 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**LEAD**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 33 | Number of Distinct Observations | 31 |
| | | Number of Missing Observations | 0 |

| | | | |
|---|---|---|---|
| Minimum | 3.1 | Mean | 170 |
| Maximum | 1630 | Median | 31.1 |
| SD | 311 | Std. Error of Mean | 54.15 |
| Coefficient of Variation | 1.83 | Skewness | 3.544 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.576 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.931 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.296 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.154 | Data Not Normal at 5% Significance Level | |

**Data Not Normal at 5% Significance Level**

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 261.7 | 95% Adjusted-CLT UCL (Chen-1995) | 294.7 |
| | | 95% Modified-t UCL (Johnson-1978) | 267.3 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.135 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.821 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.173 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.163 | Data Not Gamma Distributed at 5% Significance Level | |

**Data Not Gamma Distributed at 5% Significance Level**

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.457 | k star (bias corrected MLE) | 0.436 |
| Theta hat (MLE) | 372 | Theta star (bias corrected MLE) | 390.2 |
| nu hat (MLE) | 30.16 | nu star (bias corrected) | 28.75 |
| MLE Mean (bias corrected) | 170 | MLE Sd (bias corrected) | 257.5 |
| | | Approximate Chi Square Value (0.05) | 17.52 |
| Adjusted Level of Significance | 0.0419 | Adjusted Chi Square Value | 17.06 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 279 | 95% Adjusted Gamma UCL (use when n<50) | 286.4 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.929 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.931 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.131 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.154 | Data appear Lognormal at 5% Significance Level | |

**Data appear Approximate Lognormal at 5% Significance Level**

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 1.131 | Mean of logged Data | 3.726 |
| Maximum of Logged Data | 7.396 | SD of logged Data | 1.847 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 745 | 90% Chebyshev (MVUE) UCL | 464.1 |

| | | | |
|---|---|---|---|
| 95% Chebyshev (MVUE) UCL | 582.8 | 97.5% Chebyshev (MVUE) UCL | 747.6 |
| 99% Chebyshev (MVUE) UCL | 1071 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 259.1 | 95% Jackknife UCL | 261.7 |
| 95% Standard Bootstrap UCL | 257.6 | 95% Bootstrap-t UCL | 352.5 |
| 95% Hall's Bootstrap UCL | 636.1 | 95% Percentile Bootstrap UCL | 270.8 |
| 95% BCA Bootstrap UCL | 306.3 | | |
| 90% Chebyshev(Mean, Sd) UCL | 332.4 | 95% Chebyshev(Mean, Sd) UCL | 406 |
| 97.5% Chebyshev(Mean, Sd) UCL | 508.1 | 99% Chebyshev(Mean, Sd) UCL | 708.7 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 406 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**MANGANESE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 33 | Number of Distinct Observations | 33 |
| | | Number of Missing Observations | 0 |
| Minimum | 3.7 | Mean | 74 |
| Maximum | 397 | Median | 35.2 |
| SD | 96.61 | Std. Error of Mean | 16.82 |
| Coefficient of Variation | 1.305 | Skewness | 2.398 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.688 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.931 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.233 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.154 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
|---|---|---|---|
| 95% Student's-t UCL | 102.5 | 95% Adjusted-CLT UCL (Chen-1995) | 109.2 |
| | | 95% Modified-t UCL (Johnson-1978) | 103.7 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.644 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.786 | Detected data appear Gamma Distributed at 5% Significance Level | |

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| | | | |
|---|---|---|---|
| K-S Test Statistic | 0.12 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.159 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.785 | k star (bias corrected MLE) | 0.734 |
| Theta hat (MLE) | 94.22 | Theta star (bias corrected MLE) | 100.8 |
| nu hat (MLE) | 51.84 | nu star (bias corrected) | 48.46 |
| MLE Mean (bias corrected) | 74 | MLE Sd (bias corrected) | 86.36 |
| | | Approximate Chi Square Value (0.05) | 33.48 |
| Adjusted Level of Significance | 0.0419 | Adjusted Chi Square Value | 32.84 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50) | 107.1 | 95% Adjusted Gamma UCL (use when n<50) | 109.2 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.949 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.931 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.132 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.154 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 1.308 | Mean of logged Data | 3.547 |
| Maximum of Logged Data | 5.984 | SD of logged Data | 1.332 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 165.4 | 90% Chebyshev (MVUE) UCL | 149.4 |
| 95% Chebyshev (MVUE) UCL | 180.7 | 97.5% Chebyshev (MVUE) UCL | 224.1 |
| 99% Chebyshev (MVUE) UCL | 309.4 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 101.7 | 95% Jackknife UCL | 102.5 |
| 95% Standard Bootstrap UCL | 101.3 | 95% Bootstrap-t UCL | 116.3 |
| 95% Hall's Bootstrap UCL | 141.4 | 95% Percentile Bootstrap UCL | 103.8 |
| 95% BCA Bootstrap UCL | 108.2 | | |
| 90% Chebyshev(Mean, Sd) UCL | 124.5 | 95% Chebyshev(Mean, Sd) UCL | 147.3 |
| 97.5% Chebyshev(Mean, Sd) UCL | 179 | 99% Chebyshev(Mean, Sd) UCL | 241.3 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Adjusted Gamma UCL | 109.2 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)

and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

**THALLIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 33 | Number of Distinct Observations | 20 |
| Number of Detects | 3 | Number of Non-Detects | 30 |
| Number of Distinct Detects | 3 | Number of Distinct Non-Detects | 17 |
| Minimum Detect | 0.25 | Minimum Non-Detect | 2.2 |
| Maximum Detect | 6.35 | Maximum Non-Detect | 8 |
| Variance Detects | 12.28 | Percent Non-Detects | 90.91% |
| Mean Detects | 2.303 | SD Detects | 3.505 |
| Median Detects | 0.31 | CV Detects | 1.522 |
| Skewness Detects | 1.731 | Kurtosis Detects | N/A |
| Mean of Logged Detects | -0.236 | SD of Logged Detects | 1.809 |

Warning: Data set has only 3 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.757 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.767 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.382 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.512 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Approximate Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.47 | Standard Error of Mean | 0.23 |
| SD | 1.057 | 95% KM (BCA) UCL | N/A |
| 95% KM (t) UCL | 0.859 | 95% KM (Percentile Bootstrap) UCL | N/A |
| 95% KM (z) UCL | 0.848 | 95% KM Bootstrap t UCL | N/A |
| 90% KM Chebyshev UCL | 1.16 | 95% KM Chebyshev UCL | 1.472 |
| 97.5% KM Chebyshev UCL | 1.906 | 99% KM Chebyshev UCL | 2.759 |

**Gamma GOF Tests on Detected Observations Only**

Not Enough Data to Perform GOF Test

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.58 | k star (bias corrected MLE) | N/A |
| Theta hat (MLE) | 3.971 | Theta star (bias corrected MLE) | N/A |
| nu hat (MLE) | 3.48 | nu star (bias corrected) | N/A |
| MLE Mean (bias corrected) | N/A | MLE Sd (bias corrected) | N/A |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.198 | nu hat (KM) | 13.04 |
| | | Adjusted Level of Significance (β) | 0.0419 |

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (13.04, α) | 5.922 | Adjusted Chi Square Value (13.04, β) | 5.675 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 1.035 | 95% Gamma Adjusted KM-UCL (use when n<50) | 1.079 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.8 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.767 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.364 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.512 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.536 | Mean in Log Scale | -1.108 |
| SD in Original Scale | 1.066 | SD in Log Scale | 0.779 |
| 95% t UCL (assumes normality of ROS data) | 0.85 | 95% Percentile Bootstrap UCL | 0.894 |
| 95% BCA Bootstrap UCL | 1.1 | 95% Bootstrap t UCL | 1.921 |
| 95% H-UCL (Log ROS) | 0.605 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -1.181 | 95% H-UCL (KM -Log) | 0.435 |
| KM SD (logged) | 0.554 | 95% Critical H Value (KM-Log) | 1.979 |
| KM Standard Error of Mean (logged) | 0.148 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 1.713 | Mean in Log Scale | 0.384 |
| SD in Original Scale | 1.093 | SD in Log Scale | 0.582 |
| 95% t UCL (Assumes normality) | 2.036 | 95% H-Stat UCL | 2.137 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.859 | 95% KM (Percentile Bootstrap) UCL | N/A |

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**AROCLOR-1254**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 33 | Number of Distinct Observations | 23 |
| Number of Detects | 4 | Number of Non-Detects | 29 |
| Number of Distinct Detects | 4 | Number of Distinct Non-Detects | 19 |
| Minimum Detect | 0.063 | Minimum Non-Detect | 0.039 |

| | | | |
|---|---|---|---|
| Maximum Detect | 0.23 | Maximum Non-Detect | 0.125 |
| Variance Detects | 0.00568 | Percent Non-Detects | 87.88% |
| Mean Detects | 0.139 | SD Detects | 0.0754 |
| Median Detects | 0.132 | CV Detects | 0.541 |
| Skewness Detects | 0.374 | Kurtosis Detects | -2.478 |
| Mean of Logged Detects | -2.093 | SD of Logged Detects | 0.582 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.954 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.748 | Detected Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.226 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.443 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.0514 | Standard Error of Mean | 0.008 |
| SD | 0.0399 | 95% KM (BCA) UCL | N/A |
| 95% KM (t) UCL | 0.065 | 95% KM (Percentile Bootstrap) UCL | N/A |
| 95% KM (z) UCL | 0.0646 | 95% KM Bootstrap t UCL | N/A |
| 90% KM Chebyshev UCL | 0.0755 | 95% KM Chebyshev UCL | 0.0865 |
| 97.5% KM Chebyshev UCL | 0.102 | 99% KM Chebyshev UCL | 0.131 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.257 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.659 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.225 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.396 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 4.285 | k star (bias corrected MLE) | 1.238 |
| Theta hat (MLE) | 0.0325 | Theta star (bias corrected MLE) | 0.112 |
| nu hat (MLE) | 34.28 | nu star (bias corrected) | 9.904 |
| MLE Mean (bias corrected) | 0.139 | MLE Sd (bias corrected) | 0.125 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 1.662 | nu hat (KM) | 109.7 |
| Approximate Chi Square Value (109.68, α) | 86.51 | Adjusted Chi Square Value (109.68, β) | 85.45 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.0652 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.066 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 0.0257 |
| Maximum | 0.23 | Median | 0.01 |
| SD | 0.0487 | CV | 1.896 |

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| | | | |
|---|---|---|---|
| k hat (MLE) | 0.914 | k star (bias corrected MLE) | 0.851 |
| Theta hat (MLE) | 0.0281 | Theta star (bias corrected MLE) | 0.0301 |
| nu hat (MLE) | 60.35 | nu star (bias corrected) | 56.2 |
| MLE Mean (bias corrected) | 0.0257 | MLE Sd (bias corrected) | 0.0278 |
| | | Adjusted Level of Significance (β) | 0.0419 |
| Approximate Chi Square Value (56.20, α) | 39.97 | Adjusted Chi Square Value (56.20, β) | 39.26 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0361 | 95% Gamma Adjusted UCL (use when n<50) | N/A |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.963 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.748 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.209 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.443 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.0244 | Mean in Log Scale | -4.562 |
| SD in Original Scale | 0.0493 | SD in Log Scale | 1.08 |
| 95% t UCL (assumes normality of ROS data) | 0.0389 | 95% Percentile Bootstrap UCL | 0.0402 |
| 95% BCA Bootstrap UCL | 0.0452 | 95% Bootstrap t UCL | 0.0634 |
| 95% H-UCL (Log ROS) | 0.0304 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -3.1 | 95% H-UCL (KM -Log) | 0.0564 |
| KM SD (logged) | 0.417 | 95% Critical H Value (KM-Log) | 1.874 |
| KM Standard Error of Mean (logged) | 0.0845 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.041 | Mean in Log Scale | -3.453 |
| SD in Original Scale | 0.0446 | SD in Log Scale | 0.605 |
| 95% t UCL (Assumes normality) | 0.0542 | 95% H-Stat UCL | 0.0472 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.065 | 95% KM (Percentile Bootstrap) UCL | N/A |

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

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**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 33 | Number of Distinct Observations | 32 |
| Number of Detects | 32 | Number of Non-Detects | 1 |
| Number of Distinct Detects | 31 | Number of Distinct Non-Detects | 1 |
| Minimum Detect | 9.80E-04 | Minimum Non-Detect | 0.0042 |
| Maximum Detect | 57 | Maximum Non-Detect | 0.0042 |
| Variance Detects | 103.3 | Percent Non-Detects | 3.03% |
| Mean Detects | 2.429 | SD Detects | 10.16 |
| Median Detects | 0.069 | CV Detects | 4.184 |
| Skewness Detects | 5.331 | Kurtosis Detects | 29.25 |
| Mean of Logged Detects | -2.627 | SD of Logged Detects | 2.541 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.261 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.93 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.458 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.157 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 2.356 | Standard Error of Mean | 1.744 |
| SD | 9.859 | 95% KM (BCA) UCL | 5.885 |
| 95% KM (t) UCL | 5.309 | 95% KM (Percentile Bootstrap) UCL | 5.638 |
| 95% KM (z) UCL | 5.224 | 95% KM Bootstrap t UCL | 20.55 |
| 90% KM Chebyshev UCL | 7.587 | 95% KM Chebyshev UCL | 9.956 |
| 97.5% KM Chebyshev UCL | 13.25 | 99% KM Chebyshev UCL | 19.71 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 3.715 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.901 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.288 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.172 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.208 | k star (bias corrected MLE) | 0.209 |
| Theta hat (MLE) | 11.67 | Theta star (bias corrected MLE) | 11.6 |
| nu hat (MLE) | 13.32 | nu star (bias corrected) | 13.4 |
| MLE Mean (bias corrected) | 2.429 | MLE Sd (bias corrected) | 5.308 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.0571 | nu hat (KM) | 3.768 |
| Approximate Chi Square Value (3.77, α) | 0.632 | Adjusted Chi Square Value (3.77, β) | 0.573 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 14.04 | 95% Gamma Adjusted KM-UCL (use when n<50) | 15.5 |

Gamma (KM) may not be used when k hat (KM) is < 0.1

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 9.80E-04 | Mean | 2.356 |
| Maximum | 57 | Median | 0.062 |
| SD | 10.01 | CV | 4.25 |
| k hat (MLE) | 0.207 | k star (bias corrected MLE) | 0.208 |
| Theta hat (MLE) | 11.4 | Theta star (bias corrected MLE) | 11.32 |
| nu hat (MLE) | 13.64 | nu star (bias corrected) | 13.73 |
| MLE Mean (bias corrected) | 2.356 | MLE Sd (bias corrected) | 5.165 |
| | | Adjusted Level of Significance (β) | 0.0419 |
| Approximate Chi Square Value (13.73, α) | 6.388 | Adjusted Chi Square Value (13.73, β) | 6.13 |
| 95% Gamma Approximate UCL (use when n>=50) | 5.064 | 95% Gamma Adjusted UCL (use when n<50) | 5.277 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.967 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.93 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.0849 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.157 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 2.356 | Mean in Log Scale | -2.749 |
| SD in Original Scale | 10.01 | SD in Log Scale | 2.597 |
| 95% t UCL (assumes normality of ROS data) | 5.308 | 95% Percentile Bootstrap UCL | 5.786 |
| 95% BCA Bootstrap UCL | 8.294 | 95% Bootstrap t UCL | 20.4 |
| 95% H-UCL (Log ROS) | 16.86 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -2.743 | 95% H-UCL (KM -Log) | 13.94 |
| KM SD (logged) | 2.55 | 95% Critical H Value (KM-Log) | 4.718 |
| KM Standard Error of Mean (logged) | 0.451 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 2.356 | Mean in Log Scale | -2.734 |
| SD in Original Scale | 10.01 | SD in Log Scale | 2.575 |
| 95% t UCL (Assumes normality) | 5.308 | 95% H-Stat UCL | 15.63 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Lognormal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 99% KM (Chebyshev) UCL | 19.71 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 33 | Number of Distinct Observations | 31 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.0056 | Mean | 2.623 |
| Maximum | 63 | Median | 0.076 |
| SD | 11.07 | Std. Error of Mean | 1.927 |
| Coefficient of Variation | 4.22 | Skewness | 5.407 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.258 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.931 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.457 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.154 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 5.886 | 95% Adjusted-CLT UCL (Chen-1995) | 7.729 |
| | | 95% Modified-t UCL (Johnson-1978) | 6.188 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 4.515 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.894 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.313 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.169 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.224 | k star (bias corrected MLE) | 0.224 |
| Theta hat (MLE) | 11.71 | Theta star (bias corrected MLE) | 11.72 |
| nu hat (MLE) | 14.78 | nu star (bias corrected) | 14.77 |
| MLE Mean (bias corrected) | 2.623 | MLE Sd (bias corrected) | 5.544 |
| | | Approximate Chi Square Value (0.05) | 7.101 |
| Adjusted Level of Significance | 0.0419 | Adjusted Chi Square Value | 6.828 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 5.454 | 95% Adjusted Gamma UCL (use when n<50) | 5.673 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.922 | **Shapiro Wilk Lognormal GOF Test** | |

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| | | | |
|---|---|---|---|
| 5% Shapiro Wilk Critical Value | 0.931 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.109 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.154 | Data appear Lognormal at 5% Significance Level | |

Data appear Approximate Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -5.185 | Mean of logged Data | -2.264 |
| Maximum of Logged Data | 4.143 | SD of logged Data | 2.223 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 6.392 | 90% Chebyshev (MVUE) UCL | 2.582 |
| 95% Chebyshev (MVUE) UCL | 3.304 | 97.5% Chebyshev (MVUE) UCL | 4.307 |
| 99% Chebyshev (MVUE) UCL | 6.277 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 5.791 | 95% Jackknife UCL | 5.886 |
| 95% Standard Bootstrap UCL | 5.717 | 95% Bootstrap-t UCL | 22.75 |
| 95% Hall's Bootstrap UCL | 23.21 | 95% Percentile Bootstrap UCL | 6.291 |
| 95% BCA Bootstrap UCL | 8.766 | | |
| 90% Chebyshev(Mean, Sd) UCL | 8.402 | 95% Chebyshev(Mean, Sd) UCL | 11.02 |
| 97.5% Chebyshev(Mean, Sd) UCL | 14.65 | 99% Chebyshev(Mean, Sd) UCL | 21.79 |

**Suggested UCL to Use**

| | |
|---|---|
| 97.5% Chebyshev (Mean, Sd) UCL | 14.65 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**BENZO(B)FLUORANTHENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 33 | Number of Distinct Observations | 31 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.001 | Mean | 4.899 |
| Maximum | 130 | Median | 0.12 |
| SD | 22.66 | Std. Error of Mean | 3.944 |
| Coefficient of Variation | 4.625 | Skewness | 5.595 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.232 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.931 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.45 | **Lilliefors GOF Test** | |

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| | | | |
|---|---|---|---|
| 5% Lilliefors Critical Value | 0.154 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 11.58 | 95% Adjusted-CLT UCL (Chen-1995) | 15.49 |
| | | 95% Modified-t UCL (Johnson-1978) | 12.22 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 4.231 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.914 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.317 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.171 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.192 | k star (bias corrected MLE) | 0.194 |
| Theta hat (MLE) | 25.55 | Theta star (bias corrected MLE) | 25.19 |
| nu hat (MLE) | 12.65 | nu star (bias corrected) | 12.84 |
| MLE Mean (bias corrected) | 4.899 | MLE Sd (bias corrected) | 11.11 |
| | | Approximate Chi Square Value (0.05) | 5.782 |
| Adjusted Level of Significance | 0.0419 | Adjusted Chi Square Value | 5.539 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 10.87 | 95% Adjusted Gamma UCL (use when n<50) | 11.35 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.966 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.931 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.106 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.154 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -6.908 | Mean of logged Data | -2.275 |
| Maximum of Logged Data | 4.868 | SD of logged Data | 2.609 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 28.49 | 90% Chebyshev (MVUE) UCL | 6.286 |
| 95% Chebyshev (MVUE) UCL | 8.16 | 97.5% Chebyshev (MVUE) UCL | 10.76 |
| 99% Chebyshev (MVUE) UCL | 15.87 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 11.39 | 95% Jackknife UCL | 11.58 |
| 95% Standard Bootstrap UCL | 11.16 | 95% Bootstrap-t UCL | 70.04 |

| | | | |
|---|---|---|---|
| 95% Hall's Bootstrap UCL | 70.46 | 95% Percentile Bootstrap UCL | 12.77 |
| 95% BCA Bootstrap UCL | 16.86 | | |
| 90% Chebyshev(Mean, Sd) UCL | 16.73 | 95% Chebyshev(Mean, Sd) UCL | 22.09 |
| 97.5% Chebyshev(Mean, Sd) UCL | 29.53 | 99% Chebyshev(Mean, Sd) UCL | 44.14 |

**Suggested UCL to Use**

| | |
|---|---|
| 97.5% Chebyshev (Mean, Sd) UCL | 29.53 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**BENZO(K)FLUORANTHENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 33 | Number of Distinct Observations | 30 |
| Number of Detects | 30 | Number of Non-Detects | 3 |
| Number of Distinct Detects | 27 | Number of Distinct Non-Detects | 3 |
| Minimum Detect | 0.0019 | Minimum Non-Detect | 0.0042 |
| Maximum Detect | 16 | Maximum Non-Detect | 2.2 |
| Variance Detects | 10.47 | Percent Non-Detects | 9.09% |
| Mean Detects | 0.972 | SD Detects | 3.236 |
| Median Detects | 0.0975 | CV Detects | 3.327 |
| Skewness Detects | 4.166 | Kurtosis Detects | 17.72 |
| Mean of Logged Detects | -2.577 | SD of Logged Detects | 2.235 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.328 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.927 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.463 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.162 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.891 | Standard Error of Mean | 0.539 |
| SD | 3.044 | 95% KM (BCA) UCL | 1.857 |
| 95% KM (t) UCL | 1.804 | 95% KM (Percentile Bootstrap) UCL | 1.851 |
| 95% KM (z) UCL | 1.778 | 95% KM Bootstrap t UCL | 12.05 |
| 90% KM Chebyshev UCL | 2.508 | 95% KM Chebyshev UCL | 3.241 |
| 97.5% KM Chebyshev UCL | 4.258 | 99% KM Chebyshev UCL | 6.255 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.708 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.867 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.262 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.175 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

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**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.274 | k star (bias corrected MLE) | 0.269 |
| Theta hat (MLE) | 3.543 | Theta star (bias corrected MLE) | 3.612 |
| nu hat (MLE) | 16.47 | nu star (bias corrected) | 16.15 |
| MLE Mean (bias corrected) | 0.972 | MLE Sd (bias corrected) | 1.874 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.0857 | nu hat (KM) | 5.657 |
| Approximate Chi Square Value (5.66, α) | 1.467 | Adjusted Chi Square Value (5.66, β) | 1.361 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 3.437 | 95% Gamma Adjusted KM-UCL (use when n<50) | 3.704 |

Gamma (KM) may not be used when k hat (KM) is < 0.1

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.0019 | Mean | 0.885 |
| Maximum | 16 | Median | 0.06 |
| SD | 3.093 | CV | 3.495 |
| k hat (MLE) | 0.266 | k star (bias corrected MLE) | 0.262 |
| Theta hat (MLE) | 3.322 | Theta star (bias corrected MLE) | 3.373 |
| nu hat (MLE) | 17.58 | nu star (bias corrected) | 17.32 |
| MLE Mean (bias corrected) | 0.885 | MLE Sd (bias corrected) | 1.728 |
| | | Adjusted Level of Significance (β) | 0.0419 |
| Approximate Chi Square Value (17.32, α) | 8.899 | Adjusted Chi Square Value (17.32, β) | 8.588 |
| 95% Gamma Approximate UCL (use when n>=50) | 1.722 | 95% Gamma Adjusted UCL (use when n<50) | 1.784 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.96 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.927 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.0913 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.162 | Detected Data appear Lognormal at 5% Significance Level | |

**Detected Data appear Lognormal at 5% Significance Level**

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.887 | Mean in Log Scale | -2.712 |
| SD in Original Scale | 3.092 | SD in Log Scale | 2.211 |
| 95% t UCL (assumes normality of ROS data) | 1.799 | 95% Percentile Bootstrap UCL | 1.858 |
| 95% BCA Bootstrap UCL | 2.337 | 95% Bootstrap t UCL | 12.75 |
| 95% H-UCL (Log ROS) | 3.926 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -2.725 | 95% H-UCL (KM -Log) | 4.106 |
| KM SD (logged) | 2.228 | 95% Critical H Value (KM-Log) | 4.205 |
| KM Standard Error of Mean (logged) | 0.402 | | |

**DL/2 Statistics**

| DL/2 Normal | | DL/2 Log-Transformed | |
|---|---|---|---|
| Mean in Original Scale | 0.922 | Mean in Log Scale | -2.581 |
| SD in Original Scale | 3.088 | SD in Log Scale | 2.274 |
| 95% t UCL (Assumes normality) | 1.833 | 95% H-Stat UCL | 5.61 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Lognormal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 99% KM (Chebyshev) UCL | 6.255 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**CHRYSENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 33 | Number of Distinct Observations | 31 |
| Number of Detects | 32 | Number of Non-Detects | 1 |
| Number of Distinct Detects | 30 | Number of Distinct Non-Detects | 1 |
| Minimum Detect | 0.0018 | Minimum Non-Detect | 0.0042 |
| Maximum Detect | 86 | Maximum Non-Detect | 0.0042 |
| Variance Detects | 234.6 | Percent Non-Detects | 3.03% |
| Mean Detects | 3.639 | SD Detects | 15.32 |
| Median Detects | 0.11 | CV Detects | 4.209 |
| Skewness Detects | 5.351 | Kurtosis Detects | 29.43 |
| Mean of Logged Detects | -2.209 | SD of Logged Detects | 2.544 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.259 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.93 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.462 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.157 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 3.529 | Standard Error of Mean | 2.628 |
| SD | 14.86 | 95% KM (BCA) UCL | 8.761 |
| 95% KM (t) UCL | 7.98 | 95% KM (Percentile Bootstrap) UCL | 8.64 |
| 95% KM (z) UCL | 7.852 | 95% KM Bootstrap t UCL | 30.4 |
| 90% KM Chebyshev UCL | 11.41 | 95% KM Chebyshev UCL | 14.98 |
| 97.5% KM Chebyshev UCL | 19.94 | 99% KM Chebyshev UCL | 29.68 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 3.693 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.901 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.309 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.172 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.209 | k star (bias corrected MLE) | 0.21 |
| Theta hat (MLE) | 17.43 | Theta star (bias corrected MLE) | 17.32 |
| nu hat (MLE) | 13.36 | nu star (bias corrected) | 13.44 |
| MLE Mean (bias corrected) | 3.639 | MLE Sd (bias corrected) | 7.94 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.0564 | nu hat (KM) | 3.723 |
| Approximate Chi Square Value (3.72, α) | 0.615 | Adjusted Chi Square Value (3.72, β) | 0.557 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 21.35 | 95% Gamma Adjusted KM-UCL (use when n<50) | 23.58 |

Gamma (KM) may not be used when k hat (KM) is < 0.1

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.0018 | Mean | 3.529 |
| Maximum | 86 | Median | 0.11 |
| SD | 15.09 | CV | 4.275 |
| k hat (MLE) | 0.207 | k star (bias corrected MLE) | 0.208 |
| Theta hat (MLE) | 17.08 | Theta star (bias corrected MLE) | 16.96 |
| nu hat (MLE) | 13.64 | nu star (bias corrected) | 13.73 |
| MLE Mean (bias corrected) | 3.529 | MLE Sd (bias corrected) | 7.737 |
| | | Adjusted Level of Significance (β) | 0.0419 |
| Approximate Chi Square Value (13.73, α) | 6.389 | Adjusted Chi Square Value (13.73, β) | 6.132 |
| 95% Gamma Approximate UCL (use when n>=50) | 7.586 | 95% Gamma Adjusted UCL (use when n<50) | 7.905 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.962 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.93 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.0955 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.157 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 3.529 | Mean in Log Scale | -2.331 |
| SD in Original Scale | 15.09 | SD in Log Scale | 2.6 |
| 95% t UCL (assumes normality of ROS data) | 7.978 | 95% Percentile Bootstrap UCL | 8.57 |
| 95% BCA Bootstrap UCL | 12.01 | 95% Bootstrap t UCL | 30.34 |
| 95% H-UCL (Log ROS) | 25.93 | | |

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**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -2.328 | 95% H-UCL (KM -Log) | 21.65 |
| KM SD (logged) | 2.556 | 95% Critical H Value (KM-Log) | 4.728 |
| KM Standard Error of Mean (logged) | 0.452 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 3.529 | Mean in Log Scale | -2.329 |
| SD in Original Scale | 15.09 | SD in Log Scale | 2.597 |
| 95% t UCL (Assumes normality) | 7.978 | 95% H-Stat UCL | 25.62 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Lognormal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 99% KM (Chebyshev) UCL | 29.68 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**DIBENZO(A,H)ANTHRACENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 33 | Number of Distinct Observations | 27 |
| Number of Detects | 28 | Number of Non-Detects | 5 |
| Number of Distinct Detects | 22 | Number of Distinct Non-Detects | 5 |
| Minimum Detect | 0.0012 | Minimum Non-Detect | 0.0042 |
| Maximum Detect | 4.1 | Maximum Non-Detect | 0.31 |
| Variance Detects | 0.645 | Percent Non-Detects | 15.15% |
| Mean Detects | 0.243 | SD Detects | 0.803 |
| Median Detects | 0.0265 | CV Detects | 3.305 |
| Skewness Detects | 4.524 | Kurtosis Detects | 21.49 |
| Mean of Logged Detects | -3.522 | SD of Logged Detects | 1.807 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.328 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.924 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.439 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.167 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.207 | Standard Error of Mean | 0.13 |
| SD | 0.731 | 95% KM (BCA) UCL | 0.449 |

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| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.427 | 95% KM (Percentile Bootstrap) UCL | 0.446 |
| 95% KM (z) UCL | 0.42 | 95% KM Bootstrap t UCL | 1.687 |
| 90% KM Chebyshev UCL | 0.596 | 95% KM Chebyshev UCL | 0.772 |
| 97.5% KM Chebyshev UCL | 1.017 | 99% KM Chebyshev UCL | 1.497 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 3.338 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.849 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.339 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.179 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.323 | k star (bias corrected MLE) | 0.312 |
| Theta hat (MLE) | 0.751 | Theta star (bias corrected MLE) | 0.777 |
| nu hat (MLE) | 18.1 | nu star (bias corrected) | 17.5 |
| MLE Mean (bias corrected) | 0.243 | MLE Sd (bias corrected) | 0.435 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.0804 | nu hat (KM) | 5.306 |
| Approximate Chi Square Value (5.31, α) | 1.296 | Adjusted Chi Square Value (5.31, β) | 1.198 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.849 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.918 |

Gamma (KM) may not be used when k hat (KM) is < 0.1

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.0012 | Mean | 0.208 |
| Maximum | 4.1 | Median | 0.023 |
| SD | 0.742 | CV | 3.575 |
| k hat (MLE) | 0.322 | k star (bias corrected MLE) | 0.313 |
| Theta hat (MLE) | 0.644 | Theta star (bias corrected MLE) | 0.663 |
| nu hat (MLE) | 21.28 | nu star (bias corrected) | 20.67 |
| MLE Mean (bias corrected) | 0.208 | MLE Sd (bias corrected) | 0.371 |
| | | Adjusted Level of Significance (β) | 0.0419 |
| Approximate Chi Square Value (20.67, α) | 11.35 | Adjusted Chi Square Value (20.67, β) | 10.99 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.378 | 95% Gamma Adjusted UCL (use when n<50) | 0.39 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.941 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.924 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.172 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.167 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data appear Approximate Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.207 | Mean in Log Scale | -3.865 |
| SD in Original Scale | 0.743 | SD in Log Scale | 1.881 |
| 95% t UCL (assumes normality of ROS data) | 0.426 | 95% Percentile Bootstrap UCL | 0.448 |
| 95% BCA Bootstrap UCL | 0.648 | 95% Bootstrap t UCL | 1.736 |
| 95% H-UCL (Log ROS) | 0.417 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -3.845 | 95% H-UCL (KM -Log) | 0.381 |
| KM SD (logged) | 1.845 | 95% Critical H Value (KM-Log) | 3.612 |
| KM Standard Error of Mean (logged) | 0.332 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.211 | Mean in Log Scale | -3.788 |
| SD in Original Scale | 0.742 | SD in Log Scale | 1.902 |
| 95% t UCL (Assumes normality) | 0.43 | 95% H-Stat UCL | 0.479 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 99% KM (Chebyshev) UCL | 1.497 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**INDENO(1,2,3-CD)PYRENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 33 | Number of Distinct Observations | 31 |
| Number of Detects | 32 | Number of Non-Detects | 1 |
| Number of Distinct Detects | 30 | Number of Distinct Non-Detects | 1 |
| Minimum Detect | 0.0018 | Minimum Non-Detect | 0.0042 |
| Maximum Detect | 11 | Maximum Non-Detect | 0.0042 |
| Variance Detects | 4.173 | Percent Non-Detects | 3.03% |
| Mean Detects | 0.58 | SD Detects | 2.043 |
| Median Detects | 0.0505 | CV Detects | 3.52 |
| Skewness Detects | 4.728 | Kurtosis Detects | 23.54 |
| Mean of Logged Detects | -2.95 | SD of Logged Detects | 1.988 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.313 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.93 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.443 | **Lilliefors GOF Test** | |

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| | | | |
|---|---|---|---|
| 5% Lilliefors Critical Value | 0.157 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.563 | Standard Error of Mean | 0.351 |
| SD | 1.982 | 95% KM (BCA) UCL | 1.26 |
| 95% KM (t) UCL | 1.157 | 95% KM (Percentile Bootstrap) UCL | 1.174 |
| 95% KM (z) UCL | 1.139 | 95% KM Bootstrap t UCL | 4.442 |
| 90% KM Chebyshev UCL | 1.615 | 95% KM Chebyshev UCL | 2.091 |
| 97.5% KM Chebyshev UCL | 2.752 | 99% KM Chebyshev UCL | 4.051 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 3.705 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.861 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.295 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.169 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.288 | k star (bias corrected MLE) | 0.282 |
| Theta hat (MLE) | 2.012 | Theta star (bias corrected MLE) | 2.056 |
| nu hat (MLE) | 18.46 | nu star (bias corrected) | 18.06 |
| MLE Mean (bias corrected) | 0.58 | MLE Sd (bias corrected) | 1.092 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.0806 | nu hat (KM) | 5.319 |
| Approximate Chi Square Value (5.32, α) | 1.302 | Adjusted Chi Square Value (5.32, β) | 1.204 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 2.298 | 95% Gamma Adjusted KM-UCL (use when n<50) | 2.486 |

Gamma (KM) may not be used when k hat (KM) is < 0.1

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.0018 | Mean | 0.563 |
| Maximum | 11 | Median | 0.043 |
| SD | 2.013 | CV | 3.576 |
| k hat (MLE) | 0.286 | k star (bias corrected MLE) | 0.281 |
| Theta hat (MLE) | 1.966 | Theta star (bias corrected MLE) | 2.006 |
| nu hat (MLE) | 18.9 | nu star (bias corrected) | 18.52 |
| MLE Mean (bias corrected) | 0.563 | MLE Sd (bias corrected) | 1.063 |
| | | Adjusted Level of Significance (β) | 0.0419 |
| Approximate Chi Square Value (18.52, α) | 9.767 | Adjusted Chi Square Value (18.52, β) | 9.439 |
| 95% Gamma Approximate UCL (use when n>=50) | 1.067 | 95% Gamma Adjusted UCL (use when n<50) | 1.105 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.948 | **Shapiro Wilk GOF Test** | |

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| | | | |
|---|---|---|---|
| 5% Shapiro Wilk Critical Value | 0.93 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.122 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.157 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.563 | Mean in Log Scale | -3.045 |
| SD in Original Scale | 2.013 | SD in Log Scale | 2.031 |
| 95% t UCL (assumes normality of ROS data) | 1.156 | 95% Percentile Bootstrap UCL | 1.191 |
| 95% BCA Bootstrap UCL | 1.707 | 95% Bootstrap t UCL | 4.504 |
| 95% H-UCL (Log ROS) | 1.517 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -3.045 | 95% H-UCL (KM -Log) | 1.379 |
| KM SD (logged) | 2.002 | 95% Critical H Value (KM-Log) | 3.853 |
| KM Standard Error of Mean (logged) | 0.354 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.563 | Mean in Log Scale | -3.048 |
| SD in Original Scale | 2.013 | SD in Log Scale | 2.035 |
| 95% t UCL (Assumes normality) | 1.156 | 95% H-Stat UCL | 1.535 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Lognormal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 99% KM (Chebyshev) UCL | 4.051 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**(TIC) BENZO_J_FLUORANTHENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 3 | Number of Distinct Observations | 3 |
| | | Number of Missing Observations | 27 |
| Minimum | 1.5 | Mean | 5.633 |
| Maximum | 12 | Median | 3.4 |
| SD | 5.595 | Std. Error of Mean | 3.23 |
| Coefficient of Variation | 0.993 | Skewness | 1.51 |

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.0

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.88 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.767 | Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.322 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.512 | Data appear Normal at 5% Significance Level | |

Data appear Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 15.07 | 95% Adjusted-CLT UCL (Chen-1995) | 13.96 |
| | | 95% Modified-t UCL (Johnson-1978) | 15.53 |

**Gamma GOF Test**

Not Enough Data to Perform GOF Test

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.545 | k star (bias corrected MLE) | N/A |
| Theta hat (MLE) | 3.646 | Theta star (bias corrected MLE) | N/A |
| nu hat (MLE) | 9.269 | nu star (bias corrected) | N/A |
| MLE Mean (bias corrected) | N/A | MLE Sd (bias corrected) | N/A |
| | | Approximate Chi Square Value (0.05) | N/A |
| Adjusted Level of Significance | N/A | Adjusted Chi Square Value | N/A |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | N/A | 95% Adjusted Gamma UCL (use when n<50) | N/A |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.985 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.767 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.223 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.512 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 0.405 | Mean of logged Data | 1.371 |
| Maximum of Logged Data | 2.485 | SD of logged Data | 1.048 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 170805 | 90% Chebyshev (MVUE) UCL | 14.38 |
| 95% Chebyshev (MVUE) UCL | 18.39 | 97.5% Chebyshev (MVUE) UCL | 23.95 |
| 99% Chebyshev (MVUE) UCL | 34.89 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 10.95 | 95% Jackknife UCL | 15.07 |
| 95% Standard Bootstrap UCL | N/A | 95% Bootstrap-t UCL | N/A |
| 95% Hall's Bootstrap UCL | N/A | 95% Percentile Bootstrap UCL | N/A |
| 95% BCA Bootstrap UCL | N/A | | |
| 90% Chebyshev(Mean, Sd) UCL | 15.32 | 95% Chebyshev(Mean, Sd) UCL | 19.71 |
| 97.5% Chebyshev(Mean, Sd) UCL | 25.81 | 99% Chebyshev(Mean, Sd) UCL | 37.77 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Student's-t UCL | 15.07 |

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

# ProUCL Output for Soil Data

| Analyte | Exp Area | Matrix | Valid Obs | Rec. UCL | Method | Max | EPC=Max |
|---|---|---|---|---|---|---|---|
| ALUMINUM | BWL | Soil | 57 | 3803 | 95% Chebyshev (Mean, Sd) UCL | 9480 | FALSE |
| ANTIMONY | BWL | Soil | 57 | 1.4 | 95% KM (t) UCL | 13 | FALSE |
| ARSENIC | BWL | Soil | 57 | 115 | 95% KM (Chebyshev) UCL | 1110 | FALSE |
| CADMIUM | BWL | Soil | 57 | 2.3 | 95% KM (Chebyshev) UCL | 18 | FALSE |
| CHROMIUM | BWL | Soil | 54 | 40 | 95% Chebyshev (Mean, Sd) UCL | 280 | FALSE |
| COBALT | BWL | Soil | 57 | 1.1 | 95% KM (t) UCL | 4.8 | FALSE |
| CYANIDE | BWL | Soil | 53 | 0.60 | 95% KM (t) UCL | 4.3 | FALSE |
| IRON | BWL | Soil | 48 | 6261 | 95% Adjusted Gamma UCL | 26400 | FALSE |
| LEAD | BWL | Soil | 57 | 465 | 95% Chebyshev (Mean, Sd) UCL | 3310 | FALSE |
| THALLIUM | BWL | Soil | 57 | 0.85 | 95% KM (t) UCL | 2.3 | FALSE |
| VANADIUM | BWL | Soil | 57 | 12 | 90% Chebyshev (MVUE) UCL | 40 | FALSE |
| BENZO(A)PYRENE | BWL | Soil | 20 | 0.14 | 95% KM (t) UCL | 0.23 | FALSE |

Soil_BWL_7.10.17.xlsx

## UCL Statistics for Data Sets with Non-Detects

| | |
|---|---|
| User Selected Options | |
| Date/Time of Computation | 7/10/2017 11:03:10 AM |
| From File | Soil_BWL_7.10.17.xlsx |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Number of Bootstrap Operations | 2000 |

## ALUMINUM

### General Statistics

| | | | |
|---|---|---|---|
| Total Number of Observations | 57 | Number of Distinct Observations | 52 |
| | | Number of Missing Observations | 0 |
| Minimum | 394 | Mean | 2378 |
| Maximum | 9480 | Median | 1330 |
| SD | 2468 | Std. Error of Mean | 326.9 |
| Coefficient of Variation | 1.038 | Skewness | 1.851 |

### Normal GOF Test

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.701 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 1.09E-14 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.267 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.117 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

### Assuming Normal Distribution

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 2925 | 95% Adjusted-CLT UCL (Chen-1995) | 3001 |
| | | 95% Modified-t UCL (Johnson-1978) | 2938 |

### Gamma GOF Test

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.326 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.77 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.169 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.12 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

### Gamma Statistics

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.405 | k star (bias corrected MLE) | 1.343 |
| Theta hat (MLE) | 1693 | Theta star (bias corrected MLE) | 1771 |
| nu hat (MLE) | 160.2 | nu star (bias corrected) | 153.1 |
| MLE Mean (bias corrected) | 2378 | MLE Sd (bias corrected) | 2052 |
| | | Approximate Chi Square Value (0.05) | 125.5 |
| Adjusted Level of Significance | 0.0458 | Adjusted Chi Square Value | 124.8 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 2901 | 95% Adjusted Gamma UCL (use when n<50) | 2916 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.932 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 0.00416 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.103 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.117 | Data appear Lognormal at 5% Significance Level | |

Data appear Approximate Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 5.976 | Mean of logged Data | 7.378 |
| Maximum of Logged Data | 9.157 | SD of logged Data | 0.856 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 2962 | 90% Chebyshev (MVUE) UCL | 3176 |
| 95% Chebyshev (MVUE) UCL | 3577 | 97.5% Chebyshev (MVUE) UCL | 4135 |
| 99% Chebyshev (MVUE) UCL | 5230 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 2916 | 95% Jackknife UCL | 2925 |
| 95% Standard Bootstrap UCL | 2908 | 95% Bootstrap-t UCL | 3011 |
| 95% Hall's Bootstrap UCL | 3008 | 95% Percentile Bootstrap UCL | 2925 |
| 95% BCA Bootstrap UCL | 3066 | | |
| 90% Chebyshev(Mean, Sd) UCL | 3359 | 95% Chebyshev(Mean, Sd) UCL | 3803 |
| 97.5% Chebyshev(Mean, Sd) UCL | 4420 | 99% Chebyshev(Mean, Sd) UCL | 5631 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 3803 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**ANTIMONY**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 57 | Number of Distinct Observations | 36 |
| Number of Detects | 10 | Number of Non-Detects | 47 |
| Number of Distinct Detects | 9 | Number of Distinct Non-Detects | 32 |
| Minimum Detect | 0.67 | Minimum Non-Detect | 0.52 |
| Maximum Detect | 13.3 | Maximum Non-Detect | 10.2 |
| Variance Detects | 13.88 | Percent Non-Detects | 82.46% |
| Mean Detects | 3.115 | SD Detects | 3.725 |

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| | | | |
|---|---|---|---|
| Median Detects | 2.1 | CV Detects | 1.196 |
| Skewness Detects | 2.735 | Kurtosis Detects | 7.954 |
| Mean of Logged Detects | 0.744 | SD of Logged Detects | 0.856 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.62 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.842 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.323 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.28 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 1.002 | Standard Error of Mean | 0.25 |
| SD | 1.781 | 95% KM (BCA) UCL | 1.476 |
| 95% KM (t) UCL | 1.42 | 95% KM (Percentile Bootstrap) UCL | 1.458 |
| 95% KM (z) UCL | 1.413 | 95% KM Bootstrap t UCL | 2.025 |
| 90% KM Chebyshev UCL | 1.751 | 95% KM Chebyshev UCL | 2.091 |
| 97.5% KM Chebyshev UCL | 2.563 | 99% KM Chebyshev UCL | 3.489 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.647 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.741 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.241 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.272 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.419 | k star (bias corrected MLE) | 1.06 |
| Theta hat (MLE) | 2.196 | Theta star (bias corrected MLE) | 2.939 |
| nu hat (MLE) | 28.37 | nu star (bias corrected) | 21.2 |
| MLE Mean (bias corrected) | 3.115 | MLE Sd (bias corrected) | 3.026 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.316 | nu hat (KM) | 36.06 |
| Approximate Chi Square Value (36.06, α) | 23.32 | Adjusted Chi Square Value (36.06, β) | 23.05 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 1.549 | 95% Gamma Adjusted KM-UCL (use when n<50) | 1.567 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 0.555 |
| Maximum | 13.3 | Median | 0.01 |
| SD | 1.91 | CV | 3.444 |
| k hat (MLE) | 0.233 | k star (bias corrected MLE) | 0.233 |
| Theta hat (MLE) | 2.377 | Theta star (bias corrected MLE) | 2.383 |
| nu hat (MLE) | 26.6 | nu star (bias corrected) | 26.54 |

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| | | | |
|---|---|---|---|
| MLE Mean (bias corrected) | 0.555 | MLE Sd (bias corrected) | 1.15 |
| | | Adjusted Level of Significance (β) | 0.0458 |
| Approximate Chi Square Value (26.54, α) | 15.79 | Adjusted Chi Square Value (26.54, β) | 15.58 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.932 | 95% Gamma Adjusted UCL (use when n<50) | 0.945 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.936 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.842 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.179 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.28 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.656 | Mean in Log Scale | -1.656 |
| SD in Original Scale | 1.883 | SD in Log Scale | 1.279 |
| 95% t UCL (assumes normality of ROS data) | 1.074 | 95% Percentile Bootstrap UCL | 1.125 |
| 95% BCA Bootstrap UCL | 1.407 | 95% Bootstrap t UCL | 1.745 |
| 95% H-UCL (Log ROS) | 0.699 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -0.378 | 95% H-UCL (KM -Log) | 0.995 |
| KM SD (logged) | 0.637 | 95% Critical H Value (KM-Log) | 1.985 |
| KM Standard Error of Mean (logged) | 0.0924 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 1.071 | Mean in Log Scale | -0.497 |
| SD in Original Scale | 1.932 | SD in Log Scale | 0.878 |
| 95% t UCL (Assumes normality) | 1.499 | 95% H-Stat UCL | 1.158 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Gamma Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 1.42 | 95% GROS Approximate Gamma UCL | 0.932 |
| 95% Approximate Gamma KM-UCL | 1.549 | | |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**ARSENIC**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 57 | Number of Distinct Observations | 50 |
| Number of Detects | 49 | Number of Non-Detects | 8 |

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| | | | |
|---|---|---|---|
| Number of Distinct Detects | 43 | Number of Distinct Non-Detects | 8 |
| Minimum Detect | 0.6 | Minimum Non-Detect | 0.4 |
| Maximum Detect | 1110 | Maximum Non-Detect | 1.3 |
| Variance Detects | 25125 | Percent Non-Detects | 14.04% |
| Mean Detects | 34.38 | SD Detects | 158.5 |
| Median Detects | 3.7 | CV Detects | 4.61 |
| Skewness Detects | 6.784 | Kurtosis Detects | 46.87 |
| Mean of Logged Detects | 1.614 | SD of Logged Detects | 1.471 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.216 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.947 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.416 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.127 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 29.63 | Standard Error of Mean | 19.53 |
| SD | 145.9 | 95% KM (BCA) UCL | 67.29 |
| 95% KM (t) UCL | 62.3 | 95% KM (Percentile Bootstrap) UCL | 66.58 |
| 95% KM (z) UCL | 61.76 | 95% KM Bootstrap t UCL | 243.3 |
| 90% KM Chebyshev UCL | 88.22 | 95% KM Chebyshev UCL | 114.8 |
| 97.5% KM Chebyshev UCL | 151.6 | 99% KM Chebyshev UCL | 224 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 7.229 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.85 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.322 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.137 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.35 | k star (bias corrected MLE) | 0.342 |
| Theta hat (MLE) | 98.34 | Theta star (bias corrected MLE) | 100.6 |
| nu hat (MLE) | 34.26 | nu star (bias corrected) | 33.5 |
| MLE Mean (bias corrected) | 34.38 | MLE Sd (bias corrected) | 58.81 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.0412 | nu hat (KM) | 4.701 |
| Approximate Chi Square Value (4.70, α) | 1.017 | Adjusted Chi Square Value (4.70, β) | 0.974 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 137 | 95% Gamma Adjusted KM-UCL (use when n<50) | 143 |

Gamma (KM) may not be used when k hat (KM) is < 0.1

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

GRADIENT

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 29.56 |
| Maximum | 1110 | Median | 3.35 |
| SD | 147.2 | CV | 4.981 |
| k hat (MLE) | 0.266 | k star (bias corrected MLE) | 0.264 |
| Theta hat (MLE) | 111.2 | Theta star (bias corrected MLE) | 112.2 |
| nu hat (MLE) | 30.31 | nu star (bias corrected) | 30.05 |
| MLE Mean (bias corrected) | 29.56 | MLE Sd (bias corrected) | 57.58 |
| | | Adjusted Level of Significance (β) | 0.0458 |
| Approximate Chi Square Value (30.05, α) | 18.53 | Adjusted Chi Square Value (30.05, β) | 18.29 |
| 95% Gamma Approximate UCL (use when n>=50) | 47.93 | 95% Gamma Adjusted UCL (use when n<50) | 48.55 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.882 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.947 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.19 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.127 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 29.6 | Mean in Log Scale | 1.204 |
| SD in Original Scale | 147.2 | SD in Log Scale | 1.71 |
| 95% t UCL (assumes normality of ROS data) | 62.21 | 95% Percentile Bootstrap UCL | 67.93 |
| 95% BCA Bootstrap UCL | 89.01 | 95% Bootstrap t UCL | 245.9 |
| 95% H-UCL (Log ROS) | 31.06 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 29.62 | Mean in Log Scale | 1.262 |
| SD in Original Scale | 147.2 | SD in Log Scale | 1.626 |
| 95% t UCL (Assumes normality) | 62.23 | 95% H-Stat UCL | 26.89 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (Chebyshev) UCL | 114.8 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**CADMIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 57 | Number of Distinct Observations | 35 |
| Number of Detects | 21 | Number of Non-Detects | 36 |

| | | | |
|---|---|---|---|
| Number of Distinct Detects | 19 | Number of Distinct Non-Detects | 18 |
| Minimum Detect | 0.068 | Minimum Non-Detect | 0.04 |
| Maximum Detect | 18.1 | Maximum Non-Detect | 1.1 |
| Variance Detects | 16.75 | Percent Non-Detects | 63.16% |
| Mean Detects | 1.952 | SD Detects | 4.092 |
| Median Detects | 0.27 | CV Detects | 2.096 |
| Skewness Detects | 3.423 | Kurtosis Detects | 13.01 |
| Mean of Logged Detects | -0.804 | SD of Logged Detects | 1.705 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.514 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.908 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.323 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.193 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.75 | Standard Error of Mean | 0.352 |
| SD | 2.592 | 95% KM (BCA) UCL | 1.395 |
| 95% KM (t) UCL | 1.339 | 95% KM (Percentile Bootstrap) UCL | 1.387 |
| 95% KM (z) UCL | 1.329 | 95% KM Bootstrap t UCL | 2.268 |
| 90% KM Chebyshev UCL | 1.806 | 95% KM Chebyshev UCL | 2.284 |
| 97.5% KM Chebyshev UCL | 2.948 | 99% KM Chebyshev UCL | 4.251 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.647 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.817 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.258 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.202 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.44 | k star (bias corrected MLE) | 0.409 |
| Theta hat (MLE) | 4.438 | Theta star (bias corrected MLE) | 4.776 |
| nu hat (MLE) | 18.47 | nu star (bias corrected) | 17.17 |
| MLE Mean (bias corrected) | 1.952 | MLE Sd (bias corrected) | 3.053 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.0838 | nu hat (KM) | 9.551 |
| Approximate Chi Square Value (9.55, α) | 3.663 | Adjusted Chi Square Value (9.55, β) | 3.569 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 1.956 | 95% Gamma Adjusted KM-UCL (use when n<50) | 2.008 |

Gamma (KM) may not be used when k hat (KM) is < 0.1

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

GRADIENT

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 0.726 |
| Maximum | 18.1 | Median | 0.01 |
| SD | 2.622 | CV | 3.614 |
| k hat (MLE) | 0.247 | k star (bias corrected MLE) | 0.245 |
| Theta hat (MLE) | 2.94 | Theta star (bias corrected MLE) | 2.956 |
| nu hat (MLE) | 28.13 | nu star (bias corrected) | 27.99 |
| MLE Mean (bias corrected) | 0.726 | MLE Sd (bias corrected) | 1.464 |
| | | Adjusted Level of Significance (β) | 0.0458 |
| Approximate Chi Square Value (27.99, α) | 16.92 | Adjusted Chi Square Value (27.99, β) | 16.69 |
| 95% Gamma Approximate UCL (use when n>=50) | 1.2 | 95% Gamma Adjusted UCL (use when n<50) | 1.216 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.877 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.908 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.188 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.193 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Approximate Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.725 | Mean in Log Scale | -3.623 |
| SD in Original Scale | 2.622 | SD in Log Scale | 2.596 |
| 95% t UCL (assumes normality of ROS data) | 1.306 | 95% Percentile Bootstrap UCL | 1.352 |
| 95% BCA Bootstrap UCL | 1.816 | 95% Bootstrap t UCL | 2.466 |
| 95% H-UCL (Log ROS) | 4.164 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -2.252 | 95% H-UCL (KM -Log) | 0.629 |
| KM SD (logged) | 1.52 | 95% Critical H Value (KM-Log) | 3.114 |
| KM Standard Error of Mean (logged) | 0.21 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.768 | Mean in Log Scale | -2.19 |
| SD in Original Scale | 2.612 | SD in Log Scale | 1.599 |
| 95% t UCL (Assumes normality) | 1.346 | 95% H-Stat UCL | 0.8 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (Chebyshev) UCL | 2.284 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**CHROMIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 54 | Number of Distinct Observations | 47 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.935 | Mean | 16.31 |
| Maximum | 280 | Median | 5.65 |
| SD | 40.44 | Std. Error of Mean | 5.503 |
| Coefficient of Variation | 2.48 | Skewness | 5.586 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.366 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 0 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.403 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.121 | Data Not Normal at 5% Significance Level | |

**Data Not Normal at 5% Significance Level**

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 25.52 | 95% Adjusted-CLT UCL (Chen-1995) | 29.83 |
| | | 95% Modified-t UCL (Johnson-1978) | 26.22 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 6.298 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.798 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.303 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.126 | Data Not Gamma Distributed at 5% Significance Level | |

**Data Not Gamma Distributed at 5% Significance Level**

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.692 | k star (bias corrected MLE) | 0.666 |
| Theta hat (MLE) | 23.57 | Theta star (bias corrected MLE) | 24.49 |
| nu hat (MLE) | 74.72 | nu star (bias corrected) | 71.91 |
| MLE Mean (bias corrected) | 16.31 | MLE Sd (bias corrected) | 19.98 |
| | | Approximate Chi Square Value (0.05) | 53.38 |
| Adjusted Level of Significance | 0.0456 | Adjusted Chi Square Value | 52.94 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 21.96 | 95% Adjusted Gamma UCL (use when n<50) | 22.15 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.877 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 8.35E-06 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.185 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.121 | Data Not Lognormal at 5% Significance Level | |

**Data Not Lognormal at 5% Significance Level**

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -0.0672 | Mean of logged Data | 1.917 |
| Maximum of Logged Data | 5.635 | SD of logged Data | 1.066 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 17.05 | 90% Chebyshev (MVUE) UCL | 17.96 |
| 95% Chebyshev (MVUE) UCL | 20.75 | 97.5% Chebyshev (MVUE) UCL | 24.62 |
| 99% Chebyshev (MVUE) UCL | 32.23 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 25.36 | 95% Jackknife UCL | 25.52 |
| 95% Standard Bootstrap UCL | 25.28 | 95% Bootstrap-t UCL | 39.7 |
| 95% Hall's Bootstrap UCL | 56.1 | 95% Percentile Bootstrap UCL | 25.8 |
| 95% BCA Bootstrap UCL | 31.26 | | |
| 90% Chebyshev(Mean, Sd) UCL | 32.82 | 95% Chebyshev(Mean, Sd) UCL | 40.29 |
| 97.5% Chebyshev(Mean, Sd) UCL | 50.67 | 99% Chebyshev(Mean, Sd) UCL | 71.06 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 40.29 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**COBALT**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 57 | Number of Distinct Observations | 38 |
| Number of Detects | 24 | Number of Non-Detects | 33 |
| Number of Distinct Detects | 21 | Number of Distinct Non-Detects | 21 |
| Minimum Detect | 0.21 | Minimum Non-Detect | 0.19 |
| Maximum Detect | 4.8 | Maximum Non-Detect | 2.6 |
| Variance Detects | 2.042 | Percent Non-Detects | 57.89% |
| Mean Detects | 1.597 | SD Detects | 1.429 |
| Median Detects | 1.15 | CV Detects | 0.895 |
| Skewness Detects | 0.988 | Kurtosis Detects | -0.085 |
| Mean of Logged Detects | 0.00917 | SD of Logged Detects | 1.045 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.858 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.916 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.166 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.181 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Approximate Normal at 5% Significance Level

GRADIENT

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.833 | Standard Error of Mean | 0.153 |
| SD | 1.124 | 95% KM (BCA) UCL | 1.08 |
| 95% KM (t) UCL | 1.09 | 95% KM (Percentile Bootstrap) UCL | 1.088 |
| 95% KM (z) UCL | 1.086 | 95% KM Bootstrap t UCL | 1.145 |
| 90% KM Chebyshev UCL | 1.293 | 95% KM Chebyshev UCL | 1.502 |
| 97.5% KM Chebyshev UCL | 1.791 | 99% KM Chebyshev UCL | 2.359 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.54 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.767 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.127 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.182 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.229 | k star (bias corrected MLE) | 1.103 |
| Theta hat (MLE) | 1.299 | Theta star (bias corrected MLE) | 1.448 |
| nu hat (MLE) | 59 | nu star (bias corrected) | 52.96 |
| MLE Mean (bias corrected) | 1.597 | MLE Sd (bias corrected) | 1.52 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.55 | nu hat (KM) | 62.67 |
| Approximate Chi Square Value (62.67, α) | 45.46 | Adjusted Chi Square Value (62.67, β) | 45.08 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 1.149 | 95% Gamma Adjusted KM-UCL (use when n<50) | 1.158 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 0.715 |
| Maximum | 4.8 | Median | 0.155 |
| SD | 1.194 | CV | 1.67 |
| k hat (MLE) | 0.356 | k star (bias corrected MLE) | 0.349 |
| Theta hat (MLE) | 2.006 | Theta star (bias corrected MLE) | 2.046 |
| nu hat (MLE) | 40.62 | nu star (bias corrected) | 39.81 |
| MLE Mean (bias corrected) | 0.715 | MLE Sd (bias corrected) | 1.209 |
| | | Adjusted Level of Significance (β) | 0.0458 |
| Approximate Chi Square Value (39.81, α) | 26.36 | Adjusted Chi Square Value (39.81, β) | 26.07 |
| 95% Gamma Approximate UCL (use when n>=50) | 1.079 | 95% Gamma Adjusted UCL (use when n<50) | 1.091 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.921 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.916 | Detected Data appear Lognormal at 5% Significance Level | |

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.121 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.181 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.804 | Mean in Log Scale | -0.933 |
| SD in Original Scale | 1.145 | SD in Log Scale | 1.133 |
| 95% t UCL (assumes normality of ROS data) | 1.057 | 95% Percentile Bootstrap UCL | 1.056 |
| 95% BCA Bootstrap UCL | 1.088 | 95% Bootstrap t UCL | 1.121 |
| 95% H-UCL (Log ROS) | 1.098 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -0.784 | 95% H-UCL (KM -Log) | 1.006 |
| KM SD (logged) | 0.984 | 95% Critical H Value (KM-Log) | 2.319 |
| KM Standard Error of Mean (logged) | 0.144 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.873 | Mean in Log Scale | -0.701 |
| SD in Original Scale | 1.122 | SD in Log Scale | 0.998 |
| 95% t UCL (Assumes normality) | 1.122 | 95% H-Stat UCL | 1.115 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 1.09 | 95% KM (Percentile Bootstrap) UCL | 1.088 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**CYANIDE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 53 | Number of Distinct Observations | 25 |
| Number of Detects | 20 | Number of Non-Detects | 33 |
| Number of Distinct Detects | 17 | Number of Distinct Non-Detects | 9 |
| Minimum Detect | 0.055 | Minimum Non-Detect | 0.03 |
| Maximum Detect | 4.3 | Maximum Non-Detect | 0.19 |
| Variance Detects | 1.658 | Percent Non-Detects | 62.26% |
| Mean Detects | 0.971 | SD Detects | 1.287 |
| Median Detects | 0.355 | CV Detects | 1.325 |
| Skewness Detects | 1.681 | Kurtosis Detects | 1.818 |
| Mean of Logged Detects | -0.911 | SD of Logged Detects | 1.423 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.72 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.905 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.238 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.198 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.386 | Standard Error of Mean | 0.126 |
| SD | 0.895 | 95% KM (BCA) UCL | 0.596 |
| 95% KM (t) UCL | 0.598 | 95% KM (Percentile Bootstrap) UCL | 0.605 |
| 95% KM (z) UCL | 0.594 | 95% KM Bootstrap t UCL | 0.754 |
| 90% KM Chebyshev UCL | 0.765 | 95% KM Chebyshev UCL | 0.937 |
| 97.5% KM Chebyshev UCL | 1.175 | 99% KM Chebyshev UCL | 1.642 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.783 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.785 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.178 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.202 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.687 | k star (bias corrected MLE) | 0.617 |
| Theta hat (MLE) | 1.415 | Theta star (bias corrected MLE) | 1.574 |
| nu hat (MLE) | 27.47 | nu star (bias corrected) | 24.68 |
| MLE Mean (bias corrected) | 0.971 | MLE Sd (bias corrected) | 1.237 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.186 | nu hat (KM) | 19.75 |
| Approximate Chi Square Value (19.75, α) | 10.67 | Adjusted Chi Square Value (19.75, β) | 10.48 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.716 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.728 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 0.373 |
| Maximum | 4.3 | Median | 0.01 |
| SD | 0.909 | CV | 2.439 |
| k hat (MLE) | 0.309 | k star (bias corrected MLE) | 0.304 |
| Theta hat (MLE) | 1.208 | Theta star (bias corrected MLE) | 1.228 |
| nu hat (MLE) | 32.71 | nu star (bias corrected) | 32.19 |
| MLE Mean (bias corrected) | 0.373 | MLE Sd (bias corrected) | 0.677 |
| | | Adjusted Level of Significance (β) | 0.0455 |
| Approximate Chi Square Value (32.19, α) | 20.22 | Adjusted Chi Square Value (32.19, β) | 19.96 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.593 | 95% Gamma Adjusted UCL (use when n<50) | 0.601 |

GRADIENT

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.928 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.905 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.138 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.198 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.374 | Mean in Log Scale | -3.513 |
| SD in Original Scale | 0.909 | SD in Log Scale | 2.438 |
| 95% t UCL (assumes normality of ROS data) | 0.583 | 95% Percentile Bootstrap UCL | 0.61 |
| 95% BCA Bootstrap UCL | 0.648 | 95% Bootstrap t UCL | 0.719 |
| 95% H-UCL (Log ROS) | 2.474 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -2.504 | 95% H-UCL (KM -Log) | 0.477 |
| KM SD (logged) | 1.511 | 95% Critical H Value (KM-Log) | 2.964 |
| KM Standard Error of Mean (logged) | 0.214 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.385 | Mean in Log Scale | -2.609 |
| SD in Original Scale | 0.904 | SD in Log Scale | 1.633 |
| 95% t UCL (Assumes normality) | 0.593 | 95% H-Stat UCL | 0.565 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Gamma Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.598 | 95% GROS Approximate Gamma UCL | 0.593 |
| 95% Approximate Gamma KM-UCL | 0.716 | | |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**IRON**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 48 | Number of Distinct Observations | 47 |
| | | Number of Missing Observations | 9 |
| Minimum | 344.5 | Mean | 4879 |

| | | | |
|---|---|---|---|
| Maximum | 26400 | Median | 2935 |
| SD | 5393 | Std. Error of Mean | 778.4 |
| Coefficient of Variation | 1.105 | Skewness | 2.308 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.735 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.947 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.216 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.128 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 6185 | 95% Adjusted-CLT UCL (Chen-1995) | 6436 |
| | | 95% Modified-t UCL (Johnson-1978) | 6228 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.586 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.775 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.103 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.131 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.162 | k star (bias corrected MLE) | 1.103 |
| Theta hat (MLE) | 4200 | Theta star (bias corrected MLE) | 4423 |
| nu hat (MLE) | 111.5 | nu star (bias corrected) | 105.9 |
| MLE Mean (bias corrected) | 4879 | MLE Sd (bias corrected) | 4645 |
| | | Approximate Chi Square Value (0.05) | 83.14 |
| Adjusted Level of Significance | 0.045 | Adjusted Chi Square Value | 82.52 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50) | 6214 | 95% Adjusted Gamma UCL (use when n<50) | 6261 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.979 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.947 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.0581 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.128 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 5.842 | Mean of logged Data | 8.004 |
| Maximum of Logged Data | 10.18 | SD of logged Data | 1.029 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 7248 | 90% Chebyshev (MVUE) UCL | 7633 |
| 95% Chebyshev (MVUE) UCL | 8826 | 97.5% Chebyshev (MVUE) UCL | 10482 |
| 99% Chebyshev (MVUE) UCL | 13735 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 6159 | 95% Jackknife UCL | 6185 |
| 95% Standard Bootstrap UCL | 6121 | 95% Bootstrap-t UCL | 6724 |
| 95% Hall's Bootstrap UCL | 6627 | 95% Percentile Bootstrap UCL | 6202 |
| 95% BCA Bootstrap UCL | 6461 | | |
| 90% Chebyshev(Mean, Sd) UCL | 7214 | 95% Chebyshev(Mean, Sd) UCL | 8272 |
| 97.5% Chebyshev(Mean, Sd) UCL | 9740 | 99% Chebyshev(Mean, Sd) UCL | 12624 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Adjusted Gamma UCL | 6261 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**LEAD**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 57 | Number of Distinct Observations | 57 |
| | | Number of Missing Observations | 0 |
| Minimum | 3.8 | Mean | 187.6 |
| Maximum | 3310 | Median | 38.4 |
| SD | 479.9 | Std. Error of Mean | 63.57 |
| Coefficient of Variation | 2.558 | Skewness | 5.304 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.403 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 0 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.365 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.117 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 293.9 | 95% Adjusted-CLT UCL (Chen-1995) | 339.9 |
| | | 95% Modified-t UCL (Johnson-1978) | 301.4 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 4.657 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.815 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.232 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.125 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.509 | k star (bias corrected MLE) | 0.493 |
| Theta hat (MLE) | 368.9 | Theta star (bias corrected MLE) | 380.2 |
| nu hat (MLE) | 57.97 | nu star (bias corrected) | 56.25 |
| MLE Mean (bias corrected) | 187.6 | MLE Sd (bias corrected) | 267.1 |
| | | Approximate Chi Square Value (0.05) | 40.02 |
| Adjusted Level of Significance | 0.0458 | Adjusted Chi Square Value | 39.66 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 263.7 | 95% Adjusted Gamma UCL (use when n<50) | 266.1 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.94 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 0.0115 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.12 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.117 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 1.335 | Mean of logged Data | 3.989 |
| Maximum of Logged Data | 8.105 | SD of logged Data | 1.408 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 254.5 | 90% Chebyshev (MVUE) UCL | 243.8 |
| 95% Chebyshev (MVUE) UCL | 290.5 | 97.5% Chebyshev (MVUE) UCL | 355.3 |
| 99% Chebyshev (MVUE) UCL | 482.7 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 292.2 | 95% Jackknife UCL | 293.9 |
| 95% Standard Bootstrap UCL | 291.5 | 95% Bootstrap-t UCL | 426.7 |
| 95% Hall's Bootstrap UCL | 666.6 | 95% Percentile Bootstrap UCL | 306.9 |
| 95% BCA Bootstrap UCL | 351 | | |
| 90% Chebyshev(Mean, Sd) UCL | 378.3 | 95% Chebyshev(Mean, Sd) UCL | 464.7 |
| 97.5% Chebyshev(Mean, Sd) UCL | 584.6 | 99% Chebyshev(Mean, Sd) UCL | 820.1 |

**Suggested UCL to Use**

95% Chebyshev (Mean, Sd) UCL 464.7

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**THALLIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 57 | Number of Distinct Observations | 29 |
| Number of Detects | 8 | Number of Non-Detects | 49 |
| Number of Distinct Detects | 6 | Number of Distinct Non-Detects | 24 |
| Minimum Detect | 0.73 | Minimum Non-Detect | 0.37 |
| Maximum Detect | 2.3 | Maximum Non-Detect | 6.1 |
| Variance Detects | 0.283 | Percent Non-Detects | 85.96% |
| Mean Detects | 1.169 | SD Detects | 0.532 |
| Median Detects | 1.015 | CV Detects | 0.455 |
| Skewness Detects | 1.587 | Kurtosis Detects | 2.557 |
| Mean of Logged Detects | 0.0802 | SD of Logged Detects | 0.399 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.814 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.818 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.238 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.313 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Approximate Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.701 | Standard Error of Mean | 0.0908 |
| SD | 0.363 | 95% KM (BCA) UCL | 0.858 |
| 95% KM (t) UCL | 0.853 | 95% KM (Percentile Bootstrap) UCL | 0.855 |
| 95% KM (z) UCL | 0.85 | 95% KM Bootstrap t UCL | 0.845 |
| 90% KM Chebyshev UCL | 0.973 | 95% KM Chebyshev UCL | 1.097 |
| 97.5% KM Chebyshev UCL | 1.268 | 99% KM Chebyshev UCL | 1.605 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.52 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.718 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.261 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.295 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 6.76 | k star (bias corrected MLE) | 4.308 |
| Theta hat (MLE) | 0.173 | Theta star (bias corrected MLE) | 0.271 |
| nu hat (MLE) | 108.2 | nu star (bias corrected) | 68.93 |
| MLE Mean (bias corrected) | 1.169 | MLE Sd (bias corrected) | 0.563 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 3.717 | nu hat (KM) | 423.8 |
| Approximate Chi Square Value (423.75, α) | 377 | Adjusted Chi Square Value (423.75, β) | 375.9 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.788 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.79 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.0296 | Mean | 0.607 |
| Maximum | 2.3 | Median | 0.564 |
| SD | 0.367 | CV | 0.605 |
| k hat (MLE) | 2.81 | k star (bias corrected MLE) | 2.673 |
| Theta hat (MLE) | 0.216 | Theta star (bias corrected MLE) | 0.227 |
| nu hat (MLE) | 320.3 | nu star (bias corrected) | 304.8 |
| MLE Mean (bias corrected) | 0.607 | MLE Sd (bias corrected) | 0.371 |
| | | Adjusted Level of Significance (β) | 0.0458 |
| Approximate Chi Square Value (304.76, α) | 265.3 | Adjusted Chi Square Value (304.76, β) | 264.4 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.697 | 95% Gamma Adjusted UCL (use when n<50) | 0.7 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.886 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.818 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.248 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.313 | Detected Data appear Lognormal at 5% Significance Level | |

**Detected Data appear Lognormal at 5% Significance Level**

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.708 | Mean in Log Scale | -0.407 |
| SD in Original Scale | 0.301 | SD in Log Scale | 0.335 |
| 95% t UCL (assumes normality of ROS data) | 0.775 | 95% Percentile Bootstrap UCL | 0.777 |
| 95% BCA Bootstrap UCL | 0.789 | 95% Bootstrap t UCL | 0.808 |
| 95% H-UCL (Log ROS) | 0.76 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -0.467 | 95% H-UCL (KM -Log) | 0.783 |
| KM SD (logged) | 0.463 | 95% Critical H Value (KM-Log) | 1.868 |
| KM Standard Error of Mean (logged) | 0.145 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.954 | Mean in Log Scale | -0.242 |
| SD in Original Scale | 0.682 | SD in Log Scale | 0.61 |
| 95% t UCL (Assumes normality) | 1.105 | 95% H-Stat UCL | 1.11 |

**DL/2 is not a recommended method, provided for comparisons and historical reasons**

**Nonparametric Distribution Free UCL Statistics**

**Detected Data appear Approximate Normal Distributed at 5% Significance Level**

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.853 | 95% KM (Percentile Bootstrap) UCL | 0.855 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**VANADIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 57 | Number of Distinct Observations | 46 |
| | | Number of Missing Observations | 0 |
| Minimum | 1.35 | Mean | 9.51 |
| Maximum | 39.6 | Median | 6 |
| SD | 8.993 | Std. Error of Mean | 1.191 |
| Coefficient of Variation | 0.946 | Skewness | 1.951 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.729 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 1.86E-13 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.251 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.117 | Data Not Normal at 5% Significance Level | |

**Data Not Normal at 5% Significance Level**

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 11.5 | 95% Adjusted-CLT UCL (Chen-1995) | 11.8 |
| | | 95% Modified-t UCL (Johnson-1978) | 11.55 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.038 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.766 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.173 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.12 | Data Not Gamma Distributed at 5% Significance Level | |

**Data Not Gamma Distributed at 5% Significance Level**

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.676 | k star (bias corrected MLE) | 1.6 |
| Theta hat (MLE) | 5.673 | Theta star (bias corrected MLE) | 5.945 |
| nu hat (MLE) | 191.1 | nu star (bias corrected) | 182.4 |
| MLE Mean (bias corrected) | 9.51 | MLE Sd (bias corrected) | 7.519 |
| | | Approximate Chi Square Value (0.05) | 152.1 |
| Adjusted Level of Significance | 0.0458 | Adjusted Chi Square Value | 151.4 |

GRADIENT

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 11.4 | 95% Adjusted Gamma UCL (use when n<50) | 11.45 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.953 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 0.053 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.114 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.117 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 0.3 | Mean of logged Data | 1.925 |
| Maximum of Logged Data | 3.679 | SD of logged Data | 0.783 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 11.62 | 90% Chebyshev (MVUE) UCL | 12.47 |
| 95% Chebyshev (MVUE) UCL | 13.93 | 97.5% Chebyshev (MVUE) UCL | 15.96 |
| 99% Chebyshev (MVUE) UCL | 19.94 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 11.47 | 95% Jackknife UCL | 11.5 |
| 95% Standard Bootstrap UCL | 11.45 | 95% Bootstrap-t UCL | 12.06 |
| 95% Hall's Bootstrap UCL | 11.74 | 95% Percentile Bootstrap UCL | 11.5 |
| 95% BCA Bootstrap UCL | 11.65 | | |
| 90% Chebyshev(Mean, Sd) UCL | 13.08 | 95% Chebyshev(Mean, Sd) UCL | 14.7 |
| 97.5% Chebyshev(Mean, Sd) UCL | 16.95 | 99% Chebyshev(Mean, Sd) UCL | 21.36 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% H-UCL | 11.62 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

ProUCL computes and outputs H-statistic based UCLs for historical reasons only.
H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.
It is therefore recommended to avoid the use of H-statistic based 95% UCLs.
Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.

BENZO(A)PYRENE

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 20 | Number of Distinct Observations | 16 |
| | | Number of Missing Observations | 2 |
| Number of Detects | 6 | Number of Non-Detects | 14 |
| Number of Distinct Detects | 6 | Number of Distinct Non-Detects | 10 |
| Minimum Detect | 0.018 | Minimum Non-Detect | 0.36 |
| Maximum Detect | 0.23 | Maximum Non-Detect | 0.96 |
| Variance Detects | 0.00724 | Percent Non-Detects | 70% |
| Mean Detects | 0.075 | SD Detects | 0.0851 |
| Median Detects | 0.03 | CV Detects | 1.134 |
| Skewness Detects | 1.607 | Kurtosis Detects | 1.882 |
| Mean of Logged Detects | -3.075 | SD of Logged Detects | 1.032 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.747 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.788 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.356 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.362 | Detected Data appear Normal at 5% Significance Level | |

**Detected Data appear Approximate Normal at 5% Significance Level**

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.075 | Standard Error of Mean | 0.0347 |
| SD | 0.0776 | 95% KM (BCA) UCL | 0.138 |
| 95% KM (t) UCL | 0.135 | 95% KM (Percentile Bootstrap) UCL | 0.137 |
| 95% KM (z) UCL | 0.132 | 95% KM Bootstrap t UCL | 0.771 |
| 90% KM Chebyshev UCL | 0.179 | 95% KM Chebyshev UCL | 0.226 |
| 97.5% KM Chebyshev UCL | 0.292 | 99% KM Chebyshev UCL | 0.421 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.635 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.713 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.342 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.34 | Detected Data Not Gamma Distributed at 5% Significance Level | |

**Detected data follow Appr. Gamma Distribution at 5% Significance Level**

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.171 | k star (bias corrected MLE) | 0.697 |
| Theta hat (MLE) | 0.064 | Theta star (bias corrected MLE) | 0.108 |
| nu hat (MLE) | 14.05 | nu star (bias corrected) | 8.36 |
| MLE Mean (bias corrected) | 0.075 | MLE Sd (bias corrected) | 0.0899 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.933 | nu hat (KM) | 37.32 |
| Approximate Chi Square Value (37.32, α) | 24.33 | Adjusted Chi Square Value (37.32, β) | 23.5 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.115 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.119 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 0.0664 |
| Maximum | 0.23 | Median | 0.0576 |
| SD | 0.0538 | CV | 0.809 |
| k hat (MLE) | 1.851 | k star (bias corrected MLE) | 1.606 |
| Theta hat (MLE) | 0.0359 | Theta star (bias corrected MLE) | 0.0413 |
| nu hat (MLE) | 74.02 | nu star (bias corrected) | 64.25 |
| MLE Mean (bias corrected) | 0.0664 | MLE Sd (bias corrected) | 0.0524 |
| | | Adjusted Level of Significance (β) | 0.038 |
| Approximate Chi Square Value (64.25, α) | 46.81 | Adjusted Chi Square Value (64.25, β) | 45.64 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0912 | 95% Gamma Adjusted UCL (use when n<50) | 0.0935 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.853 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.788 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.295 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.362 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.0583 | Mean in Log Scale | -3.075 |
| SD in Original Scale | 0.0497 | SD in Log Scale | 0.655 |
| 95% t UCL (assumes normality of ROS data) | 0.0775 | 95% Percentile Bootstrap UCL | 0.0774 |
| 95% BCA Bootstrap UCL | 0.0835 | 95% Bootstrap t UCL | 0.0904 |
| 95% H-UCL (Log ROS) | 0.0795 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -3.075 | 95% H-UCL (KM -Log) | 0.125 |
| KM SD (logged) | 0.942 | 95% Critical H Value (KM-Log) | 2.551 |
| KM Standard Error of Mean (logged) | 0.421 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.19 | Mean in Log Scale | -1.95 |
| SD in Original Scale | 0.111 | SD in Log Scale | 0.95 |
| 95% t UCL (Assumes normality) | 0.233 | 95% H-Stat UCL | 0.39 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.135 | 95% KM (Percentile Bootstrap) UCL | 0.137 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

| Analyte | Exp Area | Matrix | Valid Obs | Rec. UCL | Method | Max | EPC=Max |
|---|---|---|---|---|---|---|---|
| ALUMINUM | HC | Soil | 279 | 9199 | 95% Chebyshev (Mean, Sd) UCL | 52100 | FALSE |
| ANTIMONY | HC | Soil | 279 | 5.3 | 95% KM (t) UCL | 208 | FALSE |
| ARSENIC | HC | Soil | 277 | 497 | 97.5% KM (Chebyshev) UCL | 4880 | FALSE |
| BARIUM | HC | Soil | 279 | 1943 | 95% Chebyshev (Mean, Sd) UCL | 22600 | FALSE |
| CADMIUM | HC | Soil | 279 | 2.9 | 95% KM (Chebyshev) UCL | 28 | FALSE |
| CHROMIUM | HC | Soil | 279 | 643 | 95% Chebyshev (Mean, Sd) UCL | 10100 | FALSE |
| COBALT | HC | Soil | 279 | 6.3 | 95% KM (Chebyshev) UCL | 48 | FALSE |
| COPPER | HC | Soil | 271 | 143 | 97.5% KM (Chebyshev) UCL | 1700 | FALSE |
| CYANIDE | HC | Soil | 279 | 49 | 97.5% KM (Chebyshev) UCL | 495 | FALSE |
| IRON | HC | Soil | 279 | 27559 | 95% Chebyshev (Mean, Sd) UCL | 194000 | FALSE |
| LEAD | HC | Soil | 262 | 5901 | 95% Chebyshev (Mean, Sd) UCL | 114000 | FALSE |
| MANGANESE | HC | Soil | 279 | 339 | 95% Chebyshev (Mean, Sd) UCL | 3910 | FALSE |
| MERCURY | HC | Soil | 279 | 0.77 | 95% KM (Chebyshev) UCL | 9.3 | FALSE |
| NICKEL | HC | Soil | 275 | 14 | 95% KM (Chebyshev) UCL | 214 | FALSE |
| THALLIUM | HC | Soil | 279 | 0.66 | 95% KM (t) UCL | 4.3 | FALSE |
| VANADIUM | HC | Soil | 279 | 30 | 95% Chebyshev (Mean, Sd) UCL | 114 | FALSE |
| ZINC | HC | Soil | 279 | 532 | 97.5% KM (Chebyshev) UCL | 4900 | FALSE |
| AROCLOR-1254 | HC | Soil | 200 | 0.055 | 95% KM (t) UCL | 1.4 | FALSE |
| AROCLOR-1260 | HC | Soil | 200 | 0.17 | 95% KM (t) UCL | 1.6 | FALSE |
| BENZO(A)ANTHRACENE | HC | Soil | 278 | 1.6 | 97.5% KM (Chebyshev) UCL | 29 | FALSE |
| BENZO(A)PYRENE | HC | Soil | 278 | 1.8 | 97.5% KM (Chebyshev) UCL | 29 | FALSE |
| BENZO(B)FLUORANTHENE | HC | Soil | 278 | 2.0 | 97.5% KM (Chebyshev) UCL | 29 | FALSE |
| BENZO(K)FLUORANTHENE | HC | Soil | 278 | 1.8 | 97.5% KM (Chebyshev) UCL | 27 | FALSE |
| DIBENZO(A,H)ANTHRACENE | HC | Soil | 277 | 0.30 | 95% KM (Chebyshev) UCL | 2.8 | FALSE |
| INDENO(1,2,3-CD)PYRENE | HC | Soil | 277 | 0.77 | 97.5% KM (Chebyshev) UCL | 7.0 | FALSE |
| NAPHTHALENE | HC | Soil | 277 | 0.27 | 95% KM (BCA) UCL | 15 | FALSE |

Soil_HC_7.10.17.xlsx

## UCL Statistics for Data Sets with Non-Detects

| | |
|---|---|
| User Selected Options | |
| Date/Time of Computation | 7/10/2017 11:04:47 AM |
| From File | Soil_HC_7.10.17.xlsx |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Number of Bootstrap Operations | 2000 |

## ALUMINUM

### General Statistics

| | | | |
|---|---|---|---|
| Total Number of Observations | 279 | Number of Distinct Observations | 236 |
| | | Number of Missing Observations | 0 |
| Minimum | 102 | Mean | 7321 |
| Maximum | 52100 | Median | 4900 |
| SD | 7198 | Std. Error of Mean | 430.9 |
| Coefficient of Variation | 0.983 | Skewness | 2.067 |

### Normal GOF Test

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.817 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 0 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.158 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.053 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

### Assuming Normal Distribution

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 8032 | 95% Adjusted-CLT UCL (Chen-1995) | 8086 |
| | | 95% Modified-t UCL (Johnson-1978) | 8041 |

### Gamma GOF Test

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.851 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.783 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.0801 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.0561 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

### Gamma Statistics

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.048 | k star (bias corrected MLE) | 1.04 |
| Theta hat (MLE) | 6983 | Theta star (bias corrected MLE) | 7042 |
| nu hat (MLE) | 585 | nu star (bias corrected) | 580 |
| MLE Mean (bias corrected) | 7321 | MLE Sd (bias corrected) | 7180 |
| | | Approximate Chi Square Value (0.05) | 525.2 |
| Adjusted Level of Significance | 0.0491 | Adjusted Chi Square Value | 524.9 |

### Assuming Gamma Distribution

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 8085 | 95% Adjusted Gamma UCL (use when n<50) | 8089 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.945 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 5.64E-12 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.108 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.053 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 4.625 | Mean of logged Data | 8.351 |
| Maximum of Logged Data | 10.86 | SD of logged Data | 1.173 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 9896 | 90% Chebyshev (MVUE) UCL | 10665 |
| 95% Chebyshev (MVUE) UCL | 11695 | 97.5% Chebyshev (MVUE) UCL | 13124 |
| 99% Chebyshev (MVUE) UCL | 15931 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 8029 | 95% Jackknife UCL | 8032 |
| 95% Standard Bootstrap UCL | 8046 | 95% Bootstrap-t UCL | 8104 |
| 95% Hall's Bootstrap UCL | 8084 | 95% Percentile Bootstrap UCL | 8030 |
| 95% BCA Bootstrap UCL | 8033 | | |
| 90% Chebyshev(Mean, Sd) UCL | 8613 | 95% Chebyshev(Mean, Sd) UCL | 9199 |
| 97.5% Chebyshev(Mean, Sd) UCL | 10012 | 99% Chebyshev(Mean, Sd) UCL | 11608 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 9199 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**ANTIMONY**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 279 | Number of Distinct Observations | 125 |
| Number of Detects | 143 | Number of Non-Detects | 136 |
| Number of Distinct Detects | 83 | Number of Distinct Non-Detects | 67 |
| Minimum Detect | 0.498 | Minimum Non-Detect | 0.385 |
| Maximum Detect | 207.5 | Maximum Non-Detect | 7.1 |
| Variance Detects | 381.3 | Percent Non-Detects | 48.75% |
| Mean Detects | 7.122 | SD Detects | 19.53 |
| Median Detects | 2.8 | CV Detects | 2.741 |
| Skewness Detects | 8.415 | Kurtosis Detects | 81.35 |
| Mean of Logged Detects | 1.211 | SD of Logged Detects | 0.997 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.304 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.367 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0741 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 3.908 | Standard Error of Mean | 0.86 |
| SD | 14.32 | 95% KM (BCA) UCL | 5.548 |
| 95% KM (t) UCL | 5.328 | 95% KM (Percentile Bootstrap) UCL | 5.461 |
| 95% KM (z) UCL | 5.324 | 95% KM Bootstrap t UCL | 7.341 |
| 90% KM Chebyshev UCL | 6.49 | 95% KM Chebyshev UCL | 7.659 |
| 97.5% KM Chebyshev UCL | 9.281 | 99% KM Chebyshev UCL | 12.47 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 10.63 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.794 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.217 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.0813 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.79 | k star (bias corrected MLE) | 0.778 |
| Theta hat (MLE) | 9.015 | Theta star (bias corrected MLE) | 9.153 |
| nu hat (MLE) | 226 | nu star (bias corrected) | 222.5 |
| MLE Mean (bias corrected) | 7.122 | MLE Sd (bias corrected) | 8.074 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.0745 | nu hat (KM) | 41.58 |
| Approximate Chi Square Value (41.58, α) | 27.8 | Adjusted Chi Square Value (41.58, β) | 27.74 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 5.846 | 95% Gamma Adjusted KM-UCL (use when n<50) | 5.858 |

Gamma (KM) may not be used when k hat (KM) is < 0.1

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 3.655 |
| Maximum | 207.5 | Median | 0.76 |
| SD | 14.4 | CV | 3.94 |
| k hat (MLE) | 0.244 | k star (bias corrected MLE) | 0.244 |
| Theta hat (MLE) | 14.97 | Theta star (bias corrected MLE) | 14.99 |
| nu hat (MLE) | 136.2 | nu star (bias corrected) | 136.1 |
| MLE Mean (bias corrected) | 3.655 | MLE Sd (bias corrected) | 7.402 |
| | | Adjusted Level of Significance (β) | 0.0491 |

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (136.10, α) | 110.1 | Adjusted Chi Square Value (136.10, β) | 110 |
| 95% Gamma Approximate UCL (use when n>=50) | 4.517 | 95% Gamma Adjusted UCL (use when n<50) | 4.522 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.118 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0741 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 3.845 | Mean in Log Scale | 0.0932 |
| SD in Original Scale | 14.36 | SD in Log Scale | 1.411 |
| 95% t UCL (assumes normality of ROS data) | 5.263 | 95% Percentile Bootstrap UCL | 5.425 |
| 95% BCA Bootstrap UCL | 6.163 | 95% Bootstrap t UCL | 7.447 |
| 95% H-UCL (Log ROS) | 3.674 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 3.96 | Mean in Log Scale | 0.296 |
| SD in Original Scale | 14.33 | SD in Log Scale | 1.252 |
| 95% t UCL (Assumes normality) | 5.376 | 95% H-Stat UCL | 3.513 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 5.328 | 95% KM (% Bootstrap) UCL | 5.461 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**ARSENIC**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 277 | Number of Distinct Observations | 233 |
| | | Number of Missing Observations | 2 |
| Number of Detects | 265 | Number of Non-Detects | 12 |
| Number of Distinct Detects | 226 | Number of Distinct Non-Detects | 10 |
| Minimum Detect | 0.5 | Minimum Non-Detect | 0.85 |
| Maximum Detect | 4880 | Maximum Non-Detect | 6.1 |
| Variance Detects | 361072 | Percent Non-Detects | 4.33% |
| Mean Detects | 287.5 | SD Detects | 600.9 |
| Median Detects | 50.3 | CV Detects | 2.09 |
| Skewness Detects | 3.867 | Kurtosis Detects | 18.59 |
| Mean of Logged Detects | 3.746 | SD of Logged Detects | 2.288 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.53 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.316 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0544 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 275.1 | Standard Error of Mean | 35.49 |
| SD | 589.5 | 95% KM (BCA) UCL | 342.6 |
| 95% KM (t) UCL | 333.7 | 95% KM (Percentile Bootstrap) UCL | 333.2 |
| 95% KM (z) UCL | 333.5 | 95% KM Bootstrap t UCL | 342.4 |
| 90% KM Chebyshev UCL | 381.5 | 95% KM Chebyshev UCL | 429.8 |
| 97.5% KM Chebyshev UCL | 496.7 | 99% KM Chebyshev UCL | 628.2 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 6.228 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.858 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.118 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.0606 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.351 | k star (bias corrected MLE) | 0.349 |
| Theta hat (MLE) | 819.3 | Theta star (bias corrected MLE) | 822.7 |
| nu hat (MLE) | 186 | nu star (bias corrected) | 185.2 |
| MLE Mean (bias corrected) | 287.5 | MLE Sd (bias corrected) | 486.3 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.218 | nu hat (KM) | 120.6 |
| Approximate Chi Square Value (120.63, α) | 96.26 | Adjusted Chi Square Value (120.63, β) | 96.15 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 344.7 | 95% Gamma Adjusted KM-UCL (use when n<50) | 345.1 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 275 |
| Maximum | 4880 | Median | 38.9 |
| SD | 590.6 | CV | 2.147 |
| k hat (MLE) | 0.308 | k star (bias corrected MLE) | 0.307 |
| Theta hat (MLE) | 894.3 | Theta star (bias corrected MLE) | 897 |
| nu hat (MLE) | 170.4 | nu star (bias corrected) | 169.9 |
| MLE Mean (bias corrected) | 275 | MLE Sd (bias corrected) | 496.7 |
| | | Adjusted Level of Significance (β) | 0.0491 |
| Approximate Chi Square Value (169.88, α) | 140.7 | Adjusted Chi Square Value (169.88, β) | 140.6 |
| 95% Gamma Approximate UCL (use when n>=50) | 332 | 95% Gamma Adjusted UCL (use when n<50) | 332.3 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.0986 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0544 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 275.1 | Mean in Log Scale | 3.538 |
| SD in Original Scale | 590.6 | SD in Log Scale | 2.446 |
| 95% t UCL (assumes normality of ROS data) | 333.6 | 95% Percentile Bootstrap UCL | 333.8 |
| 95% BCA Bootstrap UCL | 345.7 | 95% Bootstrap t UCL | 341.9 |
| 95% H-UCL (Log ROS) | 1169 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 275.1 | Mean in Log Scale | 3.557 |
| SD in Original Scale | 590.6 | SD in Log Scale | 2.411 |
| 95% t UCL (Assumes normality) | 333.6 | 95% H-Stat UCL | 1080 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 97.5% KM (Chebyshev) UCL | 496.7 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**BARIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 279 | Number of Distinct Observations | 252 |
| | | Number of Missing Observations | 0 |
| Minimum | 2.2 | Mean | 1172 |
| Maximum | 22600 | Median | 209 |
| SD | 2956 | Std. Error of Mean | 177 |
| Coefficient of Variation | 2.522 | Skewness | 4.135 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.442 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 0 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.348 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.053 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 1464 | 95% Adjusted-CLT UCL (Chen-1995) | 1510 |
| | | 95% Modified-t UCL (Johnson-1978) | 1471 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 10.43 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.865 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.128 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.059 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.321 | k star (bias corrected MLE) | 0.32 |
| Theta hat (MLE) | 3646 | Theta star (bias corrected MLE) | 3658 |
| nu hat (MLE) | 179.4 | nu star (bias corrected) | 178.8 |
| MLE Mean (bias corrected) | 1172 | MLE Sd (bias corrected) | 2071 |
| | | Approximate Chi Square Value (0.05) | 148.9 |
| Adjusted Level of Significance | 0.0491 | Adjusted Chi Square Value | 148.7 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 1408 | 95% Adjusted Gamma UCL (use when n<50) | 1409 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.938 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 1.22E-15 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.0981 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.053 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 0.788 | Mean of logged Data | 4.946 |
| Maximum of Logged Data | 10.03 | SD of logged Data | 2.284 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 3059 | 90% Chebyshev (MVUE) UCL | 3213 |
| 95% Chebyshev (MVUE) UCL | 3833 | 97.5% Chebyshev (MVUE) UCL | 4693 |
| 99% Chebyshev (MVUE) UCL | 6382 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 1463 | 95% Jackknife UCL | 1464 |
| 95% Standard Bootstrap UCL | 1462 | 95% Bootstrap-t UCL | 1546 |
| 95% Hall's Bootstrap UCL | 1514 | 95% Percentile Bootstrap UCL | 1472 |
| 95% BCA Bootstrap UCL | 1513 | | |
| 90% Chebyshev(Mean, Sd) UCL | 1703 | 95% Chebyshev(Mean, Sd) UCL | 1943 |
| 97.5% Chebyshev(Mean, Sd) UCL | 2277 | 99% Chebyshev(Mean, Sd) UCL | 2933 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 1943 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**CADMIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 279 | Number of Distinct Observations | 132 |
| Number of Detects | 208 | Number of Non-Detects | 71 |
| Number of Distinct Detects | 119 | Number of Distinct Non-Detects | 29 |
| Minimum Detect | 0.03 | Minimum Non-Detect | 0.02 |
| Maximum Detect | 27.5 | Maximum Non-Detect | 0.51 |
| Variance Detects | 12.26 | Percent Non-Detects | 25.45% |
| Mean Detects | 2.75 | SD Detects | 3.502 |
| Median Detects | 2.1 | CV Detects | 1.273 |
| Skewness Detects | 4.018 | Kurtosis Detects | 22.73 |
| Mean of Logged Detects | 0.307 | SD of Logged Detects | 1.394 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.652 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.219 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0614 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 2.061 | Standard Error of Mean | 0.194 |
| SD | 3.239 | 95% KM (BCA) UCL | 2.382 |
| 95% KM (t) UCL | 2.382 | 95% KM (Percentile Bootstrap) UCL | 2.396 |
| 95% KM (z) UCL | 2.381 | 95% KM Bootstrap t UCL | 2.489 |
| 90% KM Chebyshev UCL | 2.644 | 95% KM Chebyshev UCL | 2.908 |
| 97.5% KM Chebyshev UCL | 3.275 | 99% KM Chebyshev UCL | 3.995 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.151 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.792 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.07 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.065 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.837 | k star (bias corrected MLE) | 0.828 |
| Theta hat (MLE) | 3.285 | Theta star (bias corrected MLE) | 3.32 |
| nu hat (MLE) | 348.3 | nu star (bias corrected) | 344.6 |

| | | | |
|---|---|---|---|
| MLE Mean (bias corrected) | 2.75 | MLE Sd (bias corrected) | 3.022 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.405 | nu hat (KM) | 225.9 |
| Approximate Chi Square Value (225.91, α) | 192.1 | Adjusted Chi Square Value (225.91, β) | 192 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 2.423 | 95% Gamma Adjusted KM-UCL (use when n<50) | 2.425 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 2.053 |
| Maximum | 27.5 | Median | 1.05 |
| SD | 3.25 | CV | 1.583 |
| k hat (MLE) | 0.396 | k star (bias corrected MLE) | 0.395 |
| Theta hat (MLE) | 5.178 | Theta star (bias corrected MLE) | 5.203 |
| nu hat (MLE) | 221.2 | nu star (bias corrected) | 220.2 |
| MLE Mean (bias corrected) | 2.053 | MLE Sd (bias corrected) | 3.268 |
| | | Adjusted Level of Significance (β) | 0.0491 |
| Approximate Chi Square Value (220.16, α) | 186.8 | Adjusted Chi Square Value (220.16, β) | 186.7 |
| 95% Gamma Approximate UCL (use when n>=50) | 2.419 | 95% Gamma Adjusted UCL (use when n<50) | 2.421 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.129 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0614 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 2.076 | Mean in Log Scale | -0.394 |
| SD in Original Scale | 3.235 | SD in Log Scale | 1.726 |
| 95% t UCL (assumes normality of ROS data) | 2.396 | 95% Percentile Bootstrap UCL | 2.404 |
| 95% BCA Bootstrap UCL | 2.434 | 95% Bootstrap t UCL | 2.479 |
| 95% H-UCL (Log ROS) | 4.01 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 2.067 | Mean in Log Scale | -0.541 |
| SD in Original Scale | 3.241 | SD in Log Scale | 1.924 |
| 95% t UCL (Assumes normality) | 2.387 | 95% H-Stat UCL | 5.265 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (Chebyshev) UCL | 2.908 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

## CHROMIUM

### General Statistics

| | | | |
|---|---|---|---|
| Total Number of Observations | 279 | Number of Distinct Observations | 246 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.53 | Mean | 396.3 |
| Maximum | 10100 | Median | 48.2 |
| SD | 945.3 | Std. Error of Mean | 56.59 |
| Coefficient of Variation | 2.385 | Skewness | 5.53 |

### Normal GOF Test

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.473 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 0 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.338 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.053 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

### Assuming Normal Distribution

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 489.7 | 95% Adjusted-CLT UCL (Chen-1995) | 509.4 |
| | | 95% Modified-t UCL (Johnson-1978) | 492.8 |

### Gamma GOF Test

| | | | |
|---|---|---|---|
| A-D Test Statistic | 10.02 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.859 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.142 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.0589 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

### Gamma Statistics

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.345 | k star (bias corrected MLE) | 0.343 |
| Theta hat (MLE) | 1150 | Theta star (bias corrected MLE) | 1155 |
| nu hat (MLE) | 192.2 | nu star (bias corrected) | 191.5 |
| MLE Mean (bias corrected) | 396.3 | MLE Sd (bias corrected) | 676.4 |
| | | Approximate Chi Square Value (0.05) | 160.5 |
| Adjusted Level of Significance | 0.0491 | Adjusted Chi Square Value | 160.4 |

### Assuming Gamma Distribution

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 472.9 | 95% Adjusted Gamma UCL (use when n<50) | 473.3 |

### Lognormal GOF Test

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.943 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 6.65E-13 | Data Not Lognormal at 5% Significance Level | |

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.102 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.053 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -0.635 | Mean of logged Data | 4.025 |
| Maximum of Logged Data | 9.22 | SD of logged Data | 2.183 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 937.7 | 90% Chebyshev (MVUE) UCL | 995.6 |
| 95% Chebyshev (MVUE) UCL | 1180 | 97.5% Chebyshev (MVUE) UCL | 1435 |
| 99% Chebyshev (MVUE) UCL | 1937 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 489.4 | 95% Jackknife UCL | 489.7 |
| 95% Standard Bootstrap UCL | 489.1 | 95% Bootstrap-t UCL | 515.1 |
| 95% Hall's Bootstrap UCL | 531.5 | 95% Percentile Bootstrap UCL | 491.9 |
| 95% BCA Bootstrap UCL | 518.7 | | |
| 90% Chebyshev(Mean, Sd) UCL | 566.1 | 95% Chebyshev(Mean, Sd) UCL | 643 |
| 97.5% Chebyshev(Mean, Sd) UCL | 749.7 | 99% Chebyshev(Mean, Sd) UCL | 959.4 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 643 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**COBALT**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 279 | Number of Distinct Observations | 160 |
| Number of Detects | 210 | Number of Non-Detects | 69 |
| Number of Distinct Detects | 140 | Number of Distinct Non-Detects | 42 |
| Minimum Detect | 0.0725 | Minimum Non-Detect | 0.08 |
| Maximum Detect | 47.9 | Maximum Non-Detect | 2.5 |
| Variance Detects | 52.09 | Percent Non-Detects | 24.73% |
| Mean Detects | 5.951 | SD Detects | 7.218 |
| Median Detects | 3.9 | CV Detects | 1.213 |
| Skewness Detects | 3.354 | Kurtosis Detects | 15 |
| Mean of Logged Detects | 1.155 | SD of Logged Detects | 1.254 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.677 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.208 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0611 | Detected Data Not Normal at 5% Significance Level | |

**Detected Data Not Normal at 5% Significance Level**

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 4.541 | Standard Error of Mean | 0.403 |
| SD | 6.715 | 95% KM (BCA) UCL | 5.242 |
| 95% KM (t) UCL | 5.206 | 95% KM (Percentile Bootstrap) UCL | 5.222 |
| 95% KM (z) UCL | 5.204 | 95% KM Bootstrap t UCL | 5.351 |
| 90% KM Chebyshev UCL | 5.75 | 95% KM Chebyshev UCL | 6.298 |
| 97.5% KM Chebyshev UCL | 7.058 | 99% KM Chebyshev UCL | 8.551 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.858 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.788 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.0531 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.0645 | Detected data appear Gamma Distributed at 5% Significance Level | |

**Detected data follow Appr. Gamma Distribution at 5% Significance Level**

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.926 | k star (bias corrected MLE) | 0.916 |
| Theta hat (MLE) | 6.426 | Theta star (bias corrected MLE) | 6.496 |
| nu hat (MLE) | 389 | nu star (bias corrected) | 384.7 |
| MLE Mean (bias corrected) | 5.951 | MLE Sd (bias corrected) | 6.218 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.457 | nu hat (KM) | 255.1 |
| Approximate Chi Square Value (255.15, α) | 219.2 | Adjusted Chi Square Value (255.15, β) | 219 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 5.286 | 95% Gamma Adjusted KM-UCL (use when n<50) | 5.291 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 4.482 |
| Maximum | 47.9 | Median | 2.3 |
| SD | 6.764 | CV | 1.509 |
| k hat (MLE) | 0.376 | k star (bias corrected MLE) | 0.374 |
| Theta hat (MLE) | 11.93 | Theta star (bias corrected MLE) | 11.98 |
| nu hat (MLE) | 209.6 | nu star (bias corrected) | 208.7 |
| MLE Mean (bias corrected) | 4.482 | MLE Sd (bias corrected) | 7.329 |
| | | Adjusted Level of Significance (β) | 0.0491 |
| Approximate Chi Square Value (208.66, α) | 176.2 | Adjusted Chi Square Value (208.66, β) | 176.1 |
| 95% Gamma Approximate UCL (use when n>=50) | 5.306 | 95% Gamma Adjusted UCL (use when n<50) | 5.311 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.102 | **Lilliefors GOF Test** | |

| | | | |
|---|---|---|---|
| 5% Lilliefors Critical Value | 0.0611 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 4.567 | Mean in Log Scale | 0.58 |
| SD in Original Scale | 6.71 | SD in Log Scale | 1.505 |
| 95% t UCL (assumes normality of ROS data) | 5.23 | 95% Percentile Bootstrap UCL | 5.258 |
| 95% BCA Bootstrap UCL | 5.385 | 95% Bootstrap t UCL | 5.35 |
| 95% H-UCL (Log ROS) | 7.005 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 4.569 | Mean in Log Scale | 0.541 |
| SD in Original Scale | 6.709 | SD in Log Scale | 1.582 |
| 95% t UCL (Assumes normality) | 5.232 | 95% H-Stat UCL | 7.733 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (Chebyshev) UCL | 6.298 | 95% GROS Approximate Gamma UCL | 5.306 |
| 95% Approximate Gamma KM-UCL | 5.286 | | |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**COPPER**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 271 | Number of Distinct Observations | 220 |
| | | Number of Missing Observations | 8 |
| Number of Detects | 268 | Number of Non-Detects | 3 |
| Number of Distinct Detects | 217 | Number of Distinct Non-Detects | 3 |
| Minimum Detect | 0.26 | Minimum Non-Detect | 0.62 |
| Maximum Detect | 1700 | Maximum Non-Detect | 511 |
| Variance Detects | 22075 | Percent Non-Detects | 1.11% |
| Mean Detects | 87.09 | SD Detects | 148.6 |
| Median Detects | 38.38 | CV Detects | 1.706 |
| Skewness Detects | 5.878 | Kurtosis Detects | 54.27 |
| Mean of Logged Detects | 3.292 | SD of Logged Detects | 1.776 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.575 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.279 | **Lilliefors GOF Test** | |

| | | | |
|---|---|---|---|
| 5% Lilliefors Critical Value | 0.0541 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 86.4 | Standard Error of Mean | 8.999 |
| SD | 147.8 | 95% KM (BCA) UCL | 102.4 |
| 95% KM (t) UCL | 101.3 | 95% KM (Percentile Bootstrap) UCL | 101.3 |
| 95% KM (z) UCL | 101.2 | 95% KM Bootstrap t UCL | 106.7 |
| 90% KM Chebyshev UCL | 113.4 | 95% KM Chebyshev UCL | 125.6 |
| 97.5% KM Chebyshev UCL | 142.6 | 99% KM Chebyshev UCL | 175.9 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 3.227 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.818 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.102 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.0589 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.535 | k star (bias corrected MLE) | 0.531 |
| Theta hat (MLE) | 162.8 | Theta star (bias corrected MLE) | 163.9 |
| nu hat (MLE) | 286.7 | nu star (bias corrected) | 284.8 |
| MLE Mean (bias corrected) | 87.09 | MLE Sd (bias corrected) | 119.5 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.342 | nu hat (KM) | 185.3 |
| Approximate Chi Square Value (185.32, α) | 154.8 | Adjusted Chi Square Value (185.32, β) | 154.7 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 103.4 | 95% Gamma Adjusted KM-UCL (use when n<50) | 103.5 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 86.25 |
| Maximum | 1700 | Median | 37.8 |
| SD | 148 | CV | 1.716 |
| k hat (MLE) | 0.517 | k star (bias corrected MLE) | 0.513 |
| Theta hat (MLE) | 166.9 | Theta star (bias corrected MLE) | 168 |
| nu hat (MLE) | 280 | nu star (bias corrected) | 278.3 |
| MLE Mean (bias corrected) | 86.25 | MLE Sd (bias corrected) | 120.4 |
| | | Adjusted Level of Significance (β) | 0.0491 |
| Approximate Chi Square Value (278.26, α) | 240.6 | Adjusted Chi Square Value (278.26, β) | 240.4 |
| 95% Gamma Approximate UCL (use when n>=50) | 99.74 | 95% Gamma Adjusted UCL (use when n<50) | 99.81 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.103 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0541 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 86.22 | Mean in Log Scale | 3.259 |
| SD in Original Scale | 148 | SD in Log Scale | 1.806 |
| 95% t UCL (assumes normality of ROS data) | 101.1 | 95% Percentile Bootstrap UCL | 102.2 |
| 95% BCA Bootstrap UCL | 105.9 | 95% Bootstrap t UCL | 105.6 |
| 95% H-UCL (Log ROS) | 182.9 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 87.07 | Mean in Log Scale | 3.267 |
| SD in Original Scale | 148.3 | SD in Log Scale | 1.812 |
| 95% t UCL (Assumes normality) | 101.9 | 95% H-Stat UCL | 187 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 97.5% KM (Chebyshev) UCL | 142.6 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**CYANIDE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 279 | Number of Distinct Observations | 171 |
| Number of Detects | 152 | Number of Non-Detects | 127 |
| Number of Distinct Detects | 136 | Number of Distinct Non-Detects | 54 |
| Minimum Detect | 0.08 | Minimum Non-Detect | 0.02 |
| Maximum Detect | 495 | Maximum Non-Detect | 7.9 |
| Variance Detects | 6480 | Percent Non-Detects | 45.52% |
| Mean Detects | 46.12 | SD Detects | 80.5 |
| Median Detects | 12.15 | CV Detects | 1.745 |
| Skewness Detects | 2.873 | Kurtosis Detects | 9.498 |
| Mean of Logged Detects | 2.322 | SD of Logged Detects | 2.086 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.615 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.284 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0719 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 25.17 | Standard Error of Mean | 3.814 |
| SD | 63.5 | 95% KM (BCA) UCL | 31.4 |
| 95% KM (t) UCL | 31.46 | 95% KM (Percentile Bootstrap) UCL | 31.65 |
| 95% KM (z) UCL | 31.44 | 95% KM Bootstrap t UCL | 32.75 |
| 90% KM Chebyshev UCL | 36.61 | 95% KM Chebyshev UCL | 41.8 |
| 97.5% KM Chebyshev UCL | 48.99 | 99% KM Chebyshev UCL | 63.12 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.921 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.837 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.124 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.0812 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.431 | k star (bias corrected MLE) | 0.427 |
| Theta hat (MLE) | 107 | Theta star (bias corrected MLE) | 108.1 |
| nu hat (MLE) | 131 | nu star (bias corrected) | 129.7 |
| MLE Mean (bias corrected) | 46.12 | MLE Sd (bias corrected) | 70.6 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.157 | nu hat (KM) | 87.66 |
| Approximate Chi Square Value (87.66, α) | 67.07 | Adjusted Chi Square Value (87.66, β) | 66.98 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 32.89 | 95% Gamma Adjusted KM-UCL (use when n<50) | 32.94 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 25.13 |
| Maximum | 495 | Median | 0.28 |
| SD | 63.63 | CV | 2.532 |
| k hat (MLE) | 0.184 | k star (bias corrected MLE) | 0.184 |
| Theta hat (MLE) | 136.7 | Theta star (bias corrected MLE) | 136.4 |
| nu hat (MLE) | 102.6 | nu star (bias corrected) | 102.8 |
| MLE Mean (bias corrected) | 25.13 | MLE Sd (bias corrected) | 58.54 |
| | | Adjusted Level of Significance (β) | 0.0491 |
| Approximate Chi Square Value (102.82, α) | 80.42 | Adjusted Chi Square Value (102.82, β) | 80.32 |
| 95% Gamma Approximate UCL (use when n>=50) | 32.13 | 95% Gamma Adjusted UCL (use when n<50) | 32.17 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.0793 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0719 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 25.2 | Mean in Log Scale | 0.189 |
| SD in Original Scale | 63.61 | SD in Log Scale | 2.911 |
| 95% t UCL (assumes normality of ROS data) | 31.48 | 95% Percentile Bootstrap UCL | 31.79 |
| 95% BCA Bootstrap UCL | 32.33 | 95% Bootstrap t UCL | 33.08 |
| 95% H-UCL (Log ROS) | 174 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 25.33 | Mean in Log Scale | 0.258 |
| SD in Original Scale | 63.55 | SD in Log Scale | 3.003 |
| 95% t UCL (Assumes normality) | 31.61 | 95% H-Stat UCL | 255.3 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 97.5% KM (Chebyshev) UCL | 48.99 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**IRON**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 279 | Number of Distinct Observations | 261 |
| | | Number of Missing Observations | 0 |
| Minimum | 129 | Mean | 20952 |
| Maximum | 194000 | Median | 12200 |
| SD | 25320 | Std. Error of Mean | 1516 |
| Coefficient of Variation | 1.208 | Skewness | 2.697 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.752 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 0 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.205 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.053 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
|---|---|---|---|
| 95% Student's-t UCL | 23454 | 95% Adjusted-CLT UCL (Chen-1995) | 23707 |
| | | 95% Modified-t UCL (Johnson-1978) | 23494 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.197 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.797 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.0798 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.0567 | Data Not Gamma Distributed at 5% Significance Level | |

**Data Not Gamma Distributed at 5% Significance Level**

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.752 | k star (bias corrected MLE) | 0.747 |
| Theta hat (MLE) | 27851 | Theta star (bias corrected MLE) | 28064 |
| nu hat (MLE) | 419.8 | nu star (bias corrected) | 416.6 |
| MLE Mean (bias corrected) | 20952 | MLE Sd (bias corrected) | 24249 |
| | | Approximate Chi Square Value (0.05) | 370.3 |
| Adjusted Level of Significance | 0.0491 | Adjusted Chi Square Value | 370.1 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 23573 | 95% Adjusted Gamma UCL (use when n<50) | 23587 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.951 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 1.13E-09 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.101 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.053 | Data Not Lognormal at 5% Significance Level | |

**Data Not Lognormal at 5% Significance Level**

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 4.86 | Mean of logged Data | 9.155 |
| Maximum of Logged Data | 12.18 | SD of logged Data | 1.446 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 33507 | 90% Chebyshev (MVUE) UCL | 36419 |
| 95% Chebyshev (MVUE) UCL | 40828 | 97.5% Chebyshev (MVUE) UCL | 46949 |
| 99% Chebyshev (MVUE) UCL | 58972 | | |

**Nonparametric Distribution Free UCL Statistics**

**Data do not follow a Discernible Distribution (0.05)**

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 23445 | 95% Jackknife UCL | 23454 |
| 95% Standard Bootstrap UCL | 23466 | 95% Bootstrap-t UCL | 23856 |
| 95% Hall's Bootstrap UCL | 23713 | 95% Percentile Bootstrap UCL | 23460 |
| 95% BCA Bootstrap UCL | 23831 | | |
| 90% Chebyshev(Mean, Sd) UCL | 25500 | 95% Chebyshev(Mean, Sd) UCL | 27559 |
| 97.5% Chebyshev(Mean, Sd) UCL | 30419 | 99% Chebyshev(Mean, Sd) UCL | 36035 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 27559 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**LEAD**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 262 | Number of Distinct Observations | 254 |
| | | Number of Missing Observations | 17 |
| Minimum | 2.3 | Mean | 3273 |
| Maximum | 114000 | Median | 361.5 |
| SD | 9757 | Std. Error of Mean | 602.8 |
| Coefficient of Variation | 2.981 | Skewness | 7.27 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.366 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 0 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.369 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0547 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 4268 | 95% Adjusted-CLT UCL (Chen-1995) | 4554 |
| | | 95% Modified-t UCL (Johnson-1978) | 4313 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 7.424 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.867 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.117 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.0612 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.314 | k star (bias corrected MLE) | 0.313 |
| Theta hat (MLE) | 10434 | Theta star (bias corrected MLE) | 10469 |
| nu hat (MLE) | 164.4 | nu star (bias corrected) | 163.8 |
| MLE Mean (bias corrected) | 3273 | MLE Sd (bias corrected) | 5854 |
| | | Approximate Chi Square Value (0.05) | 135.2 |
| Adjusted Level of Significance | 0.0491 | Adjusted Chi Square Value | 135.1 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 3965 | 95% Adjusted Gamma UCL (use when n<50) | 3970 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.957 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 8.44E-07 | Data Not Lognormal at 5% Significance Level | |

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.0961 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.0547 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 0.833 | Mean of logged Data | 5.912 |
| Maximum of Logged Data | 11.64 | SD of logged Data | 2.391 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 10912 | 90% Chebyshev (MVUE) UCL | 11255 |
| 95% Chebyshev (MVUE) UCL | 13553 | 97.5% Chebyshev (MVUE) UCL | 16743 |
| 99% Chebyshev (MVUE) UCL | 23008 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 4265 | 95% Jackknife UCL | 4268 |
| 95% Standard Bootstrap UCL | 4247 | 95% Bootstrap-t UCL | 4783 |
| 95% Hall's Bootstrap UCL | 5100 | 95% Percentile Bootstrap UCL | 4333 |
| 95% BCA Bootstrap UCL | 4600 | | |
| 90% Chebyshev(Mean, Sd) UCL | 5082 | 95% Chebyshev(Mean, Sd) UCL | 5901 |
| 97.5% Chebyshev(Mean, Sd) UCL | 7038 | 99% Chebyshev(Mean, Sd) UCL | 9271 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 5901 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**MANGANESE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 279 | Number of Distinct Observations | 248 |
| | | Number of Missing Observations | 0 |
| Minimum | 1.1 | Mean | 225 |
| Maximum | 3910 | Median | 51.1 |
| SD | 435.9 | Std. Error of Mean | 26.1 |
| Coefficient of Variation | 1.938 | Skewness | 4.213 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.557 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 0 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.304 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.053 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 268 | 95% Adjusted-CLT UCL (Chen-1995) | 274.9 |
| | | 95% Modified-t UCL (Johnson-1978) | 269.1 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 7.157 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.834 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.12 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.058 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.45 | k star (bias corrected MLE) | 0.447 |
| Theta hat (MLE) | 500.2 | Theta star (bias corrected MLE) | 503 |
| nu hat (MLE) | 250.9 | nu star (bias corrected) | 249.6 |
| MLE Mean (bias corrected) | 225 | MLE Sd (bias corrected) | 336.4 |
| | | Approximate Chi Square Value (0.05) | 214 |
| Adjusted Level of Significance | 0.0491 | Adjusted Chi Square Value | 213.8 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 262.4 | 95% Adjusted Gamma UCL (use when n<50) | 262.6 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.947 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 2.79E-11 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.0793 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.053 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 0.0953 | Mean of logged Data | 3.98 |
| Maximum of Logged Data | 8.271 | SD of logged Data | 1.84 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 402.9 | 90% Chebyshev (MVUE) UCL | 437 |
| 95% Chebyshev (MVUE) UCL | 505.2 | 97.5% Chebyshev (MVUE) UCL | 600 |
| 99% Chebyshev (MVUE) UCL | 786 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 267.9 | 95% Jackknife UCL | 268 |
| 95% Standard Bootstrap UCL | 268.6 | 95% Bootstrap-t UCL | 273.8 |
| 95% Hall's Bootstrap UCL | 278.1 | 95% Percentile Bootstrap UCL | 269 |
| 95% BCA Bootstrap UCL | 272.6 | | |

| | | | |
|---|---|---|---|
| 90% Chebyshev(Mean, Sd) UCL | 303.2 | 95% Chebyshev(Mean, Sd) UCL | 338.7 |
| 97.5% Chebyshev(Mean, Sd) UCL | 387.9 | 99% Chebyshev(Mean, Sd) UCL | 484.6 |

**Suggested UCL to Use**

95% Chebyshev (Mean, Sd) UCL 338.7

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**MERCURY**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 279 | Number of Distinct Observations | 159 |
| Number of Detects | 211 | Number of Non-Detects | 68 |
| Number of Distinct Detects | 149 | Number of Distinct Non-Detects | 22 |
| Minimum Detect | 0.00975 | Minimum Non-Detect | 0.0079 |
| Maximum Detect | 9.3 | Maximum Non-Detect | 0.37 |
| Variance Detects | 0.902 | Percent Non-Detects | 24.37% |
| Mean Detects | 0.706 | SD Detects | 0.95 |
| Median Detects | 0.453 | CV Detects | 1.346 |
| Skewness Detects | 4.502 | Kurtosis Detects | 32.65 |
| Mean of Logged Detects | -1.005 | SD of Logged Detects | 1.241 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.648 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.232 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.061 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.541 | Standard Error of Mean | 0.0524 |
| SD | 0.874 | 95% KM (BCA) UCL | 0.628 |
| 95% KM (t) UCL | 0.628 | 95% KM (Percentile Bootstrap) UCL | 0.631 |
| 95% KM (z) UCL | 0.628 | 95% KM Bootstrap t UCL | 0.645 |
| 90% KM Chebyshev UCL | 0.699 | 95% KM Chebyshev UCL | 0.77 |
| 97.5% KM Chebyshev UCL | 0.869 | 99% KM Chebyshev UCL | 1.063 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.129 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.789 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.0597 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.0645 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data follow Appr. Gamma Distribution at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.891 | k star (bias corrected MLE) | 0.882 |
| Theta hat (MLE) | 0.791 | Theta star (bias corrected MLE) | 0.8 |
| nu hat (MLE) | 376.2 | nu star (bias corrected) | 372.2 |
| MLE Mean (bias corrected) | 0.706 | MLE Sd (bias corrected) | 0.751 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.384 | nu hat (KM) | 214.3 |
| Approximate Chi Square Value (214.28, α) | 181.4 | Adjusted Chi Square Value (214.28, β) | 181.2 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.639 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.64 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.00975 | Mean | 0.536 |
| Maximum | 9.3 | Median | 0.23 |
| SD | 0.878 | CV | 1.638 |
| k hat (MLE) | 0.504 | k star (bias corrected MLE) | 0.501 |
| Theta hat (MLE) | 1.064 | Theta star (bias corrected MLE) | 1.07 |
| nu hat (MLE) | 281.1 | nu star (bias corrected) | 279.5 |
| MLE Mean (bias corrected) | 0.536 | MLE Sd (bias corrected) | 0.757 |
| | | Adjusted Level of Significance (β) | 0.0491 |
| Approximate Chi Square Value (279.46, α) | 241.7 | Adjusted Chi Square Value (279.46, β) | 241.6 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.62 | 95% Gamma Adjusted UCL (use when n<50) | 0.62 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.0906 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.061 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.544 | Mean in Log Scale | -1.584 |
| SD in Original Scale | 0.874 | SD in Log Scale | 1.524 |
| 95% t UCL (assumes normality of ROS data) | 0.63 | 95% Percentile Bootstrap UCL | 0.631 |
| 95% BCA Bootstrap UCL | 0.645 | 95% Bootstrap t UCL | 0.654 |
| 95% H-UCL (Log ROS) | 0.832 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.543 | Mean in Log Scale | -1.616 |
| SD in Original Scale | 0.874 | SD in Log Scale | 1.572 |
| 95% t UCL (Assumes normality) | 0.63 | 95% H-Stat UCL | 0.879 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (Chebyshev) UCL | 0.77 | 95% GROS Approximate Gamma UCL | 0.62 |
| 95% Approximate Gamma KM-UCL | 0.639 | | |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**NICKEL**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 275 | Number of Distinct Observations | 193 |
| | | Number of Missing Observations | 4 |
| Number of Detects | 257 | Number of Non-Detects | 18 |
| Number of Distinct Detects | 183 | Number of Distinct Non-Detects | 16 |
| Minimum Detect | 0.17 | Minimum Non-Detect | 0.11 |
| Maximum Detect | 214 | Maximum Non-Detect | 1.1 |
| Variance Detects | 238.8 | Percent Non-Detects | 6.55% |
| Mean Detects | 10.35 | SD Detects | 15.45 |
| Median Detects | 8.1 | CV Detects | 1.493 |
| Skewness Detects | 9.154 | Kurtosis Detects | 117.9 |
| Mean of Logged Detects | 1.647 | SD of Logged Detects | 1.333 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.509 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.255 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0553 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 9.694 | Standard Error of Mean | 0.913 |
| SD | 15.12 | 95% KM (BCA) UCL | 11.41 |
| 95% KM (t) UCL | 11.2 | 95% KM (Percentile Bootstrap) UCL | 11.28 |
| 95% KM (z) UCL | 11.2 | 95% KM Bootstrap t UCL | 12.03 |
| 90% KM Chebyshev UCL | 12.43 | 95% KM Chebyshev UCL | 13.68 |
| 97.5% KM Chebyshev UCL | 15.4 | 99% KM Chebyshev UCL | 18.78 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.982 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.791 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.0808 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.0591 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.853 | k star (bias corrected MLE) | 0.845 |
| Theta hat (MLE) | 12.14 | Theta star (bias corrected MLE) | 12.25 |

| | | | |
|---|---|---|---|
| nu hat (MLE) | 438.3 | nu star (bias corrected) | 434.5 |
| MLE Mean (bias corrected) | 10.35 | MLE Sd (bias corrected) | 11.26 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.411 | nu hat (KM) | 226.1 |
| Approximate Chi Square Value (226.14, α) | 192.3 | Adjusted Chi Square Value (226.14, β) | 192.2 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 11.4 | 95% Gamma Adjusted KM-UCL (use when n<50) | 11.41 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 9.677 |
| Maximum | 214 | Median | 7.1 |
| SD | 15.16 | CV | 1.566 |
| k hat (MLE) | 0.599 | k star (bias corrected MLE) | 0.595 |
| Theta hat (MLE) | 16.16 | Theta star (bias corrected MLE) | 16.27 |
| nu hat (MLE) | 329.4 | nu star (bias corrected) | 327.2 |
| MLE Mean (bias corrected) | 9.677 | MLE Sd (bias corrected) | 12.55 |
| | | Adjusted Level of Significance (β) | 0.0491 |
| Approximate Chi Square Value (327.15, α) | 286.2 | Adjusted Chi Square Value (327.15, β) | 286 |
| 95% Gamma Approximate UCL (use when n>=50) | 11.06 | 95% Gamma Adjusted UCL (use when n<50) | 11.07 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.136 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0553 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 9.703 | Mean in Log Scale | 1.473 |
| SD in Original Scale | 15.14 | SD in Log Scale | 1.453 |
| 95% t UCL (assumes normality of ROS data) | 11.21 | 95% Percentile Bootstrap UCL | 11.39 |
| 95% BCA Bootstrap UCL | 11.97 | 95% Bootstrap t UCL | 12.08 |
| 95% H-UCL (Log ROS) | 15.67 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 9.692 | Mean in Log Scale | 1.435 |
| SD in Original Scale | 15.15 | SD in Log Scale | 1.527 |
| 95% t UCL (Assumes normality) | 11.2 | 95% H-Stat UCL | 17.16 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (Chebyshev) UCL | 13.68 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

## THALLIUM

### General Statistics

| | | | |
|---|---|---|---|
| Total Number of Observations | 279 | Number of Distinct Observations | 93 |
| Number of Detects | 38 | Number of Non-Detects | 241 |
| Number of Distinct Detects | 27 | Number of Distinct Non-Detects | 83 |
| Minimum Detect | 0.34 | Minimum Non-Detect | 0.295 |
| Maximum Detect | 4.3 | Maximum Non-Detect | 8.3 |
| Variance Detects | 0.974 | Percent Non-Detects | 86.38% |
| Mean Detects | 1.521 | SD Detects | 0.987 |
| Median Detects | 1.35 | CV Detects | 0.649 |
| Skewness Detects | 1.299 | Kurtosis Detects | 1.288 |
| Mean of Logged Detects | 0.226 | SD of Logged Detects | 0.638 |

### Normal GOF Test on Detects Only

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.864 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.938 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.219 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.144 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

### Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

| | | | |
|---|---|---|---|
| Mean | 0.586 | Standard Error of Mean | 0.044 |
| SD | 0.583 | 95% KM (BCA) UCL | 0.673 |
| 95% KM (t) UCL | 0.659 | 95% KM (Percentile Bootstrap) UCL | 0.666 |
| 95% KM (z) UCL | 0.659 | 95% KM Bootstrap t UCL | 0.665 |
| 90% KM Chebyshev UCL | 0.718 | 95% KM Chebyshev UCL | 0.778 |
| 97.5% KM Chebyshev UCL | 0.861 | 99% KM Chebyshev UCL | 1.024 |

### Gamma GOF Tests on Detected Observations Only

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.515 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.756 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.139 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.144 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

### Gamma Statistics on Detected Data Only

| | | | |
|---|---|---|---|
| k hat (MLE) | 2.746 | k star (bias corrected MLE) | 2.547 |
| Theta hat (MLE) | 0.554 | Theta star (bias corrected MLE) | 0.597 |
| nu hat (MLE) | 208.7 | nu star (bias corrected) | 193.6 |
| MLE Mean (bias corrected) | 1.521 | MLE Sd (bias corrected) | 0.953 |

### Gamma Kaplan-Meier (KM) Statistics

| | | | |
|---|---|---|---|
| k hat (KM) | 1.011 | nu hat (KM) | 564.1 |

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (564.07, α) | 510 | Adjusted Chi Square Value (564.07, β) | 509.7 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.649 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.649 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 0.311 |
| Maximum | 4.3 | Median | 0.01 |
| SD | 0.638 | CV | 2.051 |
| k hat (MLE) | 0.341 | k star (bias corrected MLE) | 0.34 |
| Theta hat (MLE) | 0.912 | Theta star (bias corrected MLE) | 0.915 |
| nu hat (MLE) | 190.4 | nu star (bias corrected) | 189.7 |
| MLE Mean (bias corrected) | 0.311 | MLE Sd (bias corrected) | 0.534 |
| | | Adjusted Level of Significance (β) | 0.0491 |
| Approximate Chi Square Value (189.67, α) | 158.8 | Adjusted Chi Square Value (189.67, β) | 158.7 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.372 | 95% Gamma Adjusted UCL (use when n<50) | 0.372 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.967 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.938 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.128 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.144 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.49 | Mean in Log Scale | -1.073 |
| SD in Original Scale | 0.573 | SD in Log Scale | 0.781 |
| 95% t UCL (assumes normality of ROS data) | 0.547 | 95% Percentile Bootstrap UCL | 0.548 |
| 95% BCA Bootstrap UCL | 0.557 | 95% Bootstrap t UCL | 0.554 |
| 95% H-UCL (Log ROS) | 0.509 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -0.781 | 95% H-UCL (KM -Log) | 0.59 |
| KM SD (logged) | 0.609 | 95% Critical H Value (KM-Log) | 1.858 |
| KM Standard Error of Mean (logged) | 0.0623 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.919 | Mean in Log Scale | -0.311 |
| SD in Original Scale | 0.694 | SD in Log Scale | 0.666 |
| 95% t UCL (Assumes normality) | 0.988 | 95% H-Stat UCL | 0.986 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Gamma Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.659 | 95% GROS Approximate Gamma UCL | 0.372 |
| 95% Approximate Gamma KM-UCL | 0.649 | | |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**VANADIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 279 | Number of Distinct Observations | 216 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.58 | Mean | 24.87 |
| Maximum | 114 | Median | 17.5 |
| SD | 21.45 | Std. Error of Mean | 1.284 |
| Coefficient of Variation | 0.862 | Skewness | 1.269 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.859 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk P Value | 0 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.146 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.053 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 26.99 | 95% Adjusted-CLT UCL (Chen-1995) | 27.09 |
| | | 95% Modified-t UCL (Johnson-1978) | 27.01 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 3.196 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.776 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.0947 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.0557 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.346 | k star (bias corrected MLE) | 1.334 |
| Theta hat (MLE) | 18.48 | Theta star (bias corrected MLE) | 18.65 |
| nu hat (MLE) | 751.1 | nu star (bias corrected) | 744.3 |
| MLE Mean (bias corrected) | 24.87 | MLE Sd (bias corrected) | 21.53 |
| | | Approximate Chi Square Value (0.05) | 682 |
| Adjusted Level of Significance | 0.0491 | Adjusted Chi Square Value | 681.7 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 27.14 | 95% Adjusted Gamma UCL (use when n<50) | 27.16 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.955 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk P Value | 7.11E-08 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.101 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.053 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -0.545 | Mean of logged Data | 2.798 |
| Maximum of Logged Data | 4.736 | SD of logged Data | 0.979 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 30 | 90% Chebyshev (MVUE) UCL | 32.04 |
| 95% Chebyshev (MVUE) UCL | 34.58 | 97.5% Chebyshev (MVUE) UCL | 38.1 |
| 99% Chebyshev (MVUE) UCL | 45.03 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 26.98 | 95% Jackknife UCL | 26.99 |
| 95% Standard Bootstrap UCL | 27.01 | 95% Bootstrap-t UCL | 27.08 |
| 95% Hall's Bootstrap UCL | 27.16 | 95% Percentile Bootstrap UCL | 27.02 |
| 95% BCA Bootstrap UCL | 27.3 | | |
| 90% Chebyshev(Mean, Sd) UCL | 28.72 | 95% Chebyshev(Mean, Sd) UCL | 30.47 |
| 97.5% Chebyshev(Mean, Sd) UCL | 32.89 | 99% Chebyshev(Mean, Sd) UCL | 37.65 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 30.47 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**ZINC**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 279 | Number of Distinct Observations | 256 |
| Number of Detects | 277 | Number of Non-Detects | 2 |
| Number of Distinct Detects | 254 | Number of Distinct Non-Detects | 2 |
| Minimum Detect | 1 | Minimum Non-Detect | 0.83 |
| Maximum Detect | 4900 | Maximum Non-Detect | 0.86 |
| Variance Detects | 282307 | Percent Non-Detects | 0.72% |
| Mean Detects | 336.4 | SD Detects | 531.3 |
| Median Detects | 156 | CV Detects | 1.579 |
| Skewness Detects | 3.701 | Kurtosis Detects | 21.77 |
| Mean of Logged Detects | 4.504 | SD of Logged Detects | 1.952 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.651 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.264 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0532 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 334 | Standard Error of Mean | 31.74 |
| SD | 529.2 | 95% KM (BCA) UCL | 391.4 |
| 95% KM (t) UCL | 386.4 | 95% KM (Percentile Bootstrap) UCL | 386.3 |
| 95% KM (z) UCL | 386.2 | 95% KM Bootstrap t UCL | 397.6 |
| 90% KM Chebyshev UCL | 429.3 | 95% KM Chebyshev UCL | 472.4 |
| 97.5% KM Chebyshev UCL | 532.3 | 99% KM Chebyshev UCL | 649.9 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 3.157 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.825 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.109 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.058 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.485 | k star (bias corrected MLE) | 0.483 |
| Theta hat (MLE) | 693.1 | Theta star (bias corrected MLE) | 697.2 |
| nu hat (MLE) | 268.9 | nu star (bias corrected) | 267.3 |
| MLE Mean (bias corrected) | 336.4 | MLE Sd (bias corrected) | 484.3 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.398 | nu hat (KM) | 222.3 |
| Approximate Chi Square Value (222.30, α) | 188.8 | Adjusted Chi Square Value (222.30, β) | 188.6 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 393.3 | 95% Gamma Adjusted KM-UCL (use when n<50) | 393.7 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 334 |
| Maximum | 4900 | Median | 152 |
| SD | 530.2 | CV | 1.587 |
| k hat (MLE) | 0.468 | k star (bias corrected MLE) | 0.465 |
| Theta hat (MLE) | 714.4 | Theta star (bias corrected MLE) | 718.4 |
| nu hat (MLE) | 260.9 | nu star (bias corrected) | 259.4 |
| MLE Mean (bias corrected) | 334 | MLE Sd (bias corrected) | 489.9 |
| | | Adjusted Level of Significance (β) | 0.0491 |
| Approximate Chi Square Value (259.44, α) | 223.1 | Adjusted Chi Square Value (259.44, β) | 223 |
| 95% Gamma Approximate UCL (use when n>=50) | 388.4 | 95% Gamma Adjusted UCL (use when n<50) | 388.7 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.123 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0532 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 334 | Mean in Log Scale | 4.465 |
| SD in Original Scale | 530.2 | SD in Log Scale | 1.997 |
| 95% t UCL (assumes normality of ROS data) | 386.4 | 95% Percentile Bootstrap UCL | 387.7 |
| 95% BCA Bootstrap UCL | 396.2 | 95% Bootstrap t UCL | 395.1 |
| 95% H-UCL (Log ROS) | 927.7 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 334 | Mean in Log Scale | 4.465 |
| SD in Original Scale | 530.2 | SD in Log Scale | 1.997 |
| 95% t UCL (Assumes normality) | 386.4 | 95% H-Stat UCL | 927.9 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 97.5% KM (Chebyshev) UCL | 532.3 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**AROCLOR-1254**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 200 | Number of Distinct Observations | 78 |
| | | Number of Missing Observations | 79 |
| Number of Detects | 8 | Number of Non-Detects | 192 |
| Number of Distinct Detects | 7 | Number of Distinct Non-Detects | 73 |
| Minimum Detect | 0.023 | Minimum Non-Detect | 0.034 |
| Maximum Detect | 1.4 | Maximum Non-Detect | 0.43 |
| Variance Detects | 0.224 | Percent Non-Detects | 96% |
| Mean Detects | 0.428 | SD Detects | 0.474 |
| Median Detects | 0.235 | CV Detects | 1.107 |
| Skewness Detects | 1.406 | Kurtosis Detects | 1.662 |
| Mean of Logged Detects | -1.543 | SD of Logged Detects | 1.407 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.827 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.818 | Detected Data appear Normal at 5% Significance Level | |

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.271 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.313 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.0399 | Standard Error of Mean | 0.00904 |
| SD | 0.119 | 95% KM (BCA) UCL | 0.0677 |
| 95% KM (t) UCL | 0.0549 | 95% KM (Percentile Bootstrap) UCL | 0.0621 |
| 95% KM (z) UCL | 0.0548 | 95% KM Bootstrap t UCL | 0.0648 |
| 90% KM Chebyshev UCL | 0.067 | 95% KM Chebyshev UCL | 0.0793 |
| 97.5% KM Chebyshev UCL | 0.0964 | 99% KM Chebyshev UCL | 0.13 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.238 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.741 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.172 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.303 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.848 | k star (bias corrected MLE) | 0.613 |
| Theta hat (MLE) | 0.505 | Theta star (bias corrected MLE) | 0.698 |
| nu hat (MLE) | 13.56 | nu star (bias corrected) | 9.811 |
| MLE Mean (bias corrected) | 0.428 | MLE Sd (bias corrected) | 0.547 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.112 | nu hat (KM) | 44.93 |
| Approximate Chi Square Value (44.93, α) | 30.55 | Adjusted Chi Square Value (44.93, β) | 30.47 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.0587 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.0589 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 0.0269 |
| Maximum | 1.4 | Median | 0.01 |
| SD | 0.121 | CV | 4.501 |
| k hat (MLE) | 0.703 | k star (bias corrected MLE) | 0.696 |
| Theta hat (MLE) | 0.0382 | Theta star (bias corrected MLE) | 0.0386 |
| nu hat (MLE) | 281.2 | nu star (bias corrected) | 278.3 |
| MLE Mean (bias corrected) | 0.0269 | MLE Sd (bias corrected) | 0.0322 |
| | | Adjusted Level of Significance (β) | 0.0488 |
| Approximate Chi Square Value (278.32, α) | 240.7 | Adjusted Chi Square Value (278.32, β) | 240.4 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0311 | 95% Gamma Adjusted UCL (use when n<50) | 0.0311 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.961 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.818 | Detected Data appear Lognormal at 5% Significance Level | |

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.173 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.313 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.0342 | Mean in Log Scale | -4.234 |
| SD in Original Scale | 0.121 | SD in Log Scale | 1.004 |
| 95% t UCL (assumes normality of ROS data) | 0.0483 | 95% Percentile Bootstrap UCL | 0.05 |
| 95% BCA Bootstrap UCL | 0.057 | 95% Bootstrap t UCL | 0.0669 |
| 95% H-UCL (Log ROS) | 0.028 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -3.668 | 95% H-UCL (KM -Log) | 0.0314 |
| KM SD (logged) | 0.525 | 95% Critical H Value (KM-Log) | 1.831 |
| KM Standard Error of Mean (logged) | 0.0423 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.0676 | Mean in Log Scale | -3.098 |
| SD in Original Scale | 0.121 | SD in Log Scale | 0.751 |
| 95% t UCL (Assumes normality) | 0.0818 | 95% H-Stat UCL | 0.0665 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.0549 | 95% KM (Percentile Bootstrap) UCL | 0.0621 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**AROCLOR-1260**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 200 | Number of Distinct Observations | 86 |
| | | Number of Missing Observations | 79 |
| Number of Detects | 36 | Number of Non-Detects | 164 |
| Number of Distinct Detects | 30 | Number of Distinct Non-Detects | 67 |
| Minimum Detect | 0.035 | Minimum Non-Detect | 0.034 |
| Maximum Detect | 1.6 | Maximum Non-Detect | 0.43 |
| Variance Detects | 0.182 | Percent Non-Detects | 82% |
| Mean Detects | 0.574 | SD Detects | 0.426 |
| Median Detects | 0.505 | CV Detects | 0.743 |
| Skewness Detects | 0.434 | Kurtosis Detects | -0.736 |
| Mean of Logged Detects | -0.997 | SD of Logged Detects | 1.126 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.931 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.935 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.121 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.148 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Approximate Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.133 | Standard Error of Mean | 0.0196 |
| SD | 0.273 | 95% KM (BCA) UCL | 0.17 |
| 95% KM (t) UCL | 0.165 | 95% KM (Percentile Bootstrap) UCL | 0.166 |
| 95% KM (z) UCL | 0.165 | 95% KM Bootstrap t UCL | 0.174 |
| 90% KM Chebyshev UCL | 0.192 | 95% KM Chebyshev UCL | 0.218 |
| 97.5% KM Chebyshev UCL | 0.255 | 99% KM Chebyshev UCL | 0.328 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.801 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.771 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.139 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.15 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data follow Appr. Gamma Distribution at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.271 | k star (bias corrected MLE) | 1.184 |
| Theta hat (MLE) | 0.452 | Theta star (bias corrected MLE) | 0.485 |
| nu hat (MLE) | 91.51 | nu star (bias corrected) | 85.21 |
| MLE Mean (bias corrected) | 0.574 | MLE Sd (bias corrected) | 0.528 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.236 | nu hat (KM) | 94.58 |
| Approximate Chi Square Value (94.58, α) | 73.15 | Adjusted Chi Square Value (94.58, β) | 73.01 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.172 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.172 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 0.112 |
| Maximum | 1.6 | Median | 0.01 |
| SD | 0.281 | CV | 2.52 |
| k hat (MLE) | 0.378 | k star (bias corrected MLE) | 0.375 |
| Theta hat (MLE) | 0.296 | Theta star (bias corrected MLE) | 0.297 |
| nu hat (MLE) | 151.1 | nu star (bias corrected) | 150.2 |
| MLE Mean (bias corrected) | 0.112 | MLE Sd (bias corrected) | 0.182 |
| | | Adjusted Level of Significance (β) | 0.0488 |
| Approximate Chi Square Value (150.18, α) | 122.9 | Adjusted Chi Square Value (150.18, β) | 122.7 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.136 | 95% Gamma Adjusted UCL (use when n<50) | 0.137 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.886 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.935 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.165 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.148 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.117 | Mean in Log Scale | -3.934 |
| SD in Original Scale | 0.28 | SD in Log Scale | 1.721 |
| 95% t UCL (assumes normality of ROS data) | 0.149 | 95% Percentile Bootstrap UCL | 0.149 |
| 95% BCA Bootstrap UCL | 0.156 | 95% Bootstrap t UCL | 0.156 |
| 95% H-UCL (Log ROS) | 0.123 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.144 | Mean in Log Scale | -2.82 |
| SD in Original Scale | 0.272 | SD in Log Scale | 1.138 |
| 95% t UCL (Assumes normality) | 0.176 | 95% H-Stat UCL | 0.137 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.165 | 95% KM (Percentile Bootstrap) UCL | 0.166 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**BENZO(A)ANTHRACENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 278 | Number of Distinct Observations | 151 |
| | | Number of Missing Observations | 1 |
| Number of Detects | 237 | Number of Non-Detects | 41 |
| Number of Distinct Detects | 142 | Number of Distinct Non-Detects | 26 |
| Minimum Detect | 0.004 | Minimum Non-Detect | 0.34 |
| Maximum Detect | 29 | Maximum Non-Detect | 7.5 |
| Variance Detects | 5.465 | Percent Non-Detects | 14.75% |
| Mean Detects | 0.888 | SD Detects | 2.338 |
| Median Detects | 0.27 | CV Detects | 2.633 |
| Skewness Detects | 8.266 | Kurtosis Detects | 90.64 |
| Mean of Logged Detects | -1.529 | SD of Logged Detects | 1.796 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.388 | **Normal GOF Test on Detected Observations Only** | |

| | | | |
|---|---|---|---|
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.353 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0576 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.781 | Standard Error of Mean | 0.131 |
| SD | 2.171 | 95% KM (BCA) UCL | 0.993 |
| 95% KM (t) UCL | 0.996 | 95% KM (Percentile Bootstrap) UCL | 1.012 |
| 95% KM (z) UCL | 0.995 | 95% KM Bootstrap t UCL | 1.118 |
| 90% KM Chebyshev UCL | 1.172 | 95% KM Chebyshev UCL | 1.35 |
| 97.5% KM Chebyshev UCL | 1.596 | 99% KM Chebyshev UCL | 2.08 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 5.328 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.832 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.126 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.0632 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.457 | k star (bias corrected MLE) | 0.454 |
| Theta hat (MLE) | 1.943 | Theta star (bias corrected MLE) | 1.956 |
| nu hat (MLE) | 216.6 | nu star (bias corrected) | 215.2 |
| MLE Mean (bias corrected) | 0.888 | MLE Sd (bias corrected) | 1.318 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.129 | nu hat (KM) | 71.87 |
| Approximate Chi Square Value (71.87, α) | 53.35 | Adjusted Chi Square Value (71.87, β) | 53.27 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 1.052 | 95% Gamma Adjusted KM-UCL (use when n<50) | 1.053 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.004 | Mean | 0.759 |
| Maximum | 29 | Median | 0.205 |
| SD | 2.18 | CV | 2.871 |
| k hat (MLE) | 0.391 | k star (bias corrected MLE) | 0.389 |
| Theta hat (MLE) | 1.943 | Theta star (bias corrected MLE) | 1.952 |
| nu hat (MLE) | 217.3 | nu star (bias corrected) | 216.3 |
| MLE Mean (bias corrected) | 0.759 | MLE Sd (bias corrected) | 1.217 |
| | | Adjusted Level of Significance (β) | 0.0491 |
| Approximate Chi Square Value (216.31, α) | 183.3 | Adjusted Chi Square Value (216.31, β) | 183.1 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.896 | 95% Gamma Adjusted UCL (use when n<50) | 0.897 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.077 | **Lilliefors GOF Test** | |

| | | | |
|---|---|---|---|
| 5% Lilliefors Critical Value | 0.0576 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.772 | Mean in Log Scale | -1.658 |
| SD in Original Scale | 2.176 | SD in Log Scale | 1.701 |
| 95% t UCL (assumes normality of ROS data) | 0.988 | 95% Percentile Bootstrap UCL | 1.005 |
| 95% BCA Bootstrap UCL | 1.084 | 95% Bootstrap t UCL | 1.137 |
| 95% H-UCL (Log ROS) | 1.078 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.806 | Mean in Log Scale | -1.507 |
| SD in Original Scale | 2.177 | SD in Log Scale | 1.67 |
| 95% t UCL (Assumes normality) | 1.021 | 95% H-Stat UCL | 1.181 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 97.5% KM (Chebyshev) UCL | 1.596 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**BENZO(A)PYRENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 278 | Number of Distinct Observations | 157 |
| | | Number of Missing Observations | 1 |
| Number of Detects | 233 | Number of Non-Detects | 45 |
| Number of Distinct Detects | 145 | Number of Distinct Non-Detects | 26 |
| Minimum Detect | 0.005 | Minimum Non-Detect | 0.34 |
| Maximum Detect | 29 | Maximum Non-Detect | 7.5 |
| Variance Detects | 6.241 | Percent Non-Detects | 16.19% |
| Mean Detects | 1.027 | SD Detects | 2.498 |
| Median Detects | 0.31 | CV Detects | 2.432 |
| Skewness Detects | 7.156 | Kurtosis Detects | 70.17 |
| Mean of Logged Detects | -1.402 | SD of Logged Detects | 1.846 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.427 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.341 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.058 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.888 | Standard Error of Mean | 0.139 |
| SD | 2.306 | 95% KM (BCA) UCL | 1.128 |
| 95% KM (t) UCL | 1.117 | 95% KM (Percentile Bootstrap) UCL | 1.13 |
| 95% KM (z) UCL | 1.116 | 95% KM Bootstrap t UCL | 1.247 |
| 90% KM Chebyshev UCL | 1.304 | 95% KM Chebyshev UCL | 1.492 |
| 97.5% KM Chebyshev UCL | 1.754 | 99% KM Chebyshev UCL | 2.268 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 4.851 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.833 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.134 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.0637 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.452 | k star (bias corrected MLE) | 0.449 |
| Theta hat (MLE) | 2.274 | Theta star (bias corrected MLE) | 2.289 |
| nu hat (MLE) | 210.5 | nu star (bias corrected) | 209.2 |
| MLE Mean (bias corrected) | 1.027 | MLE Sd (bias corrected) | 1.533 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.148 | nu hat (KM) | 82.38 |
| Approximate Chi Square Value (82.38, α) | 62.46 | Adjusted Chi Square Value (82.38, β) | 62.37 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 1.171 | 95% Gamma Adjusted KM-UCL (use when n<50) | 1.172 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.005 | Mean | 0.864 |
| Maximum | 29 | Median | 0.23 |
| SD | 2.316 | CV | 2.682 |
| k hat (MLE) | 0.379 | k star (bias corrected MLE) | 0.377 |
| Theta hat (MLE) | 2.281 | Theta star (bias corrected MLE) | 2.291 |
| nu hat (MLE) | 210.5 | nu star (bias corrected) | 209.6 |
| MLE Mean (bias corrected) | 0.864 | MLE Sd (bias corrected) | 1.407 |
| | | Adjusted Level of Significance (β) | 0.0491 |
| Approximate Chi Square Value (209.58, α) | 177.1 | Adjusted Chi Square Value (209.58, β) | 176.9 |
| 95% Gamma Approximate UCL (use when n>=50) | 1.022 | 95% Gamma Adjusted UCL (use when n<50) | 1.023 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.0867 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.058 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.878 | Mean in Log Scale | -1.565 |
| SD in Original Scale | 2.312 | SD in Log Scale | 1.748 |
| 95% t UCL (assumes normality of ROS data) | 1.107 | 95% Percentile Bootstrap UCL | 1.118 |
| 95% BCA Bootstrap UCL | 1.198 | 95% Bootstrap t UCL | 1.232 |
| 95% H-UCL (Log ROS) | 1.299 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.914 | Mean in Log Scale | -1.399 |
| SD in Original Scale | 2.311 | SD in Log Scale | 1.701 |
| 95% t UCL (Assumes normality) | 1.142 | 95% H-Stat UCL | 1.397 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 97.5% KM (Chebyshev) UCL | 1.754 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**BENZO(B)FLUORANTHENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 278 | Number of Distinct Observations | 153 |
| | | Number of Missing Observations | 1 |
| Number of Detects | 237 | Number of Non-Detects | 41 |
| Number of Distinct Detects | 143 | Number of Distinct Non-Detects | 22 |
| Minimum Detect | 0.006 | Minimum Non-Detect | 0.35 |
| Maximum Detect | 29 | Maximum Non-Detect | 7.5 |
| Variance Detects | 7.027 | Percent Non-Detects | 14.75% |
| Mean Detects | 1.245 | SD Detects | 2.651 |
| Median Detects | 0.46 | CV Detects | 2.129 |
| Skewness Detects | 6.21 | Kurtosis Detects | 54.24 |
| Mean of Logged Detects | -1.097 | SD of Logged Detects | 1.813 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.482 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.32 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0576 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 1.085 | Standard Error of Mean | 0.149 |

| | | | |
|---|---|---|---|
| SD | 2.475 | 95% KM (BCA) UCL | 1.374 |
| 95% KM (t) UCL | 1.331 | 95% KM (Percentile Bootstrap) UCL | 1.341 |
| 95% KM (z) UCL | 1.33 | 95% KM Bootstrap t UCL | 1.43 |
| 90% KM Chebyshev UCL | 1.532 | 95% KM Chebyshev UCL | 1.734 |
| 97.5% KM Chebyshev UCL | 2.015 | 99% KM Chebyshev UCL | 2.566 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 3.116 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.825 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.0994 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.0629 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.485 | k star (bias corrected MLE) | 0.482 |
| Theta hat (MLE) | 2.567 | Theta star (bias corrected MLE) | 2.585 |
| nu hat (MLE) | 229.9 | nu star (bias corrected) | 228.3 |
| MLE Mean (bias corrected) | 1.245 | MLE Sd (bias corrected) | 1.794 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.192 | nu hat (KM) | 106.9 |
| Approximate Chi Square Value (106.91, α) | 84.05 | Adjusted Chi Square Value (106.91, β) | 83.95 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 1.38 | 95% Gamma Adjusted KM-UCL (use when n<50) | 1.382 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.006 | Mean | 1.063 |
| Maximum | 29 | Median | 0.295 |
| SD | 2.486 | CV | 2.338 |
| k hat (MLE) | 0.397 | k star (bias corrected MLE) | 0.395 |
| Theta hat (MLE) | 2.681 | Theta star (bias corrected MLE) | 2.694 |
| nu hat (MLE) | 220.5 | nu star (bias corrected) | 219.4 |
| MLE Mean (bias corrected) | 1.063 | MLE Sd (bias corrected) | 1.693 |
| | | Adjusted Level of Significance (β) | 0.0491 |
| Approximate Chi Square Value (219.43, α) | 186.1 | Adjusted Chi Square Value (219.43, β) | 186 |
| 95% Gamma Approximate UCL (use when n>=50) | 1.253 | 95% Gamma Adjusted UCL (use when n<50) | 1.254 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.0735 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0576 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 1.078 | Mean in Log Scale | -1.282 |
| SD in Original Scale | 2.48 | SD in Log Scale | 1.748 |
| 95% t UCL (assumes normality of ROS data) | 1.323 | 95% Percentile Bootstrap UCL | 1.337 |

| | | | |
|---|---|---|---|
| 95% BCA Bootstrap UCL | 1.403 | 95% Bootstrap t UCL | 1.423 |
| 95% H-UCL (Log ROS) | 1.727 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 1.111 | Mean in Log Scale | -1.136 |
| SD in Original Scale | 2.477 | SD in Log Scale | 1.688 |
| 95% t UCL (Assumes normality) | 1.356 | 95% H-Stat UCL | 1.771 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 97.5% KM (Chebyshev) UCL | 2.015 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**BENZO(K)FLUORANTHENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 278 | Number of Distinct Observations | 148 |
| | | Number of Missing Observations | 1 |
| Number of Detects | 225 | Number of Non-Detects | 53 |
| Number of Distinct Detects | 133 | Number of Distinct Non-Detects | 31 |
| Minimum Detect | 0.004 | Minimum Non-Detect | 0.34 |
| Maximum Detect | 27 | Maximum Non-Detect | 7.5 |
| Variance Detects | 7.493 | Percent Non-Detects | 19.06% |
| Mean Detects | 1.091 | SD Detects | 2.737 |
| Median Detects | 0.255 | CV Detects | 2.51 |
| Skewness Detects | 5.625 | Kurtosis Detects | 41.42 |
| Mean of Logged Detects | -1.408 | SD of Logged Detects | 1.766 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.431 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.346 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0591 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.915 | Standard Error of Mean | 0.15 |
| SD | 2.486 | 95% KM (BCA) UCL | 1.19 |
| 95% KM (t) UCL | 1.161 | 95% KM (Percentile Bootstrap) UCL | 1.174 |
| 95% KM (z) UCL | 1.161 | 95% KM Bootstrap t UCL | 1.267 |

| | | | |
|---|---|---|---|
| 90% KM Chebyshev UCL | 1.363 | 95% KM Chebyshev UCL | 1.566 |
| 97.5% KM Chebyshev UCL | 1.848 | 99% KM Chebyshev UCL | 2.402 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 8.358 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.837 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.155 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.0648 | Detected Data Not Gamma Distributed at 5% Significance Level | |

**Detected Data Not Gamma Distributed at 5% Significance Level**

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.434 | k star (bias corrected MLE) | 0.432 |
| Theta hat (MLE) | 2.511 | Theta star (bias corrected MLE) | 2.528 |
| nu hat (MLE) | 195.4 | nu star (bias corrected) | 194.2 |
| MLE Mean (bias corrected) | 1.091 | MLE Sd (bias corrected) | 1.66 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.135 | nu hat (KM) | 75.28 |
| Approximate Chi Square Value (75.28, α) | 56.29 | Adjusted Chi Square Value (75.28, β) | 56.21 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 1.223 | 95% Gamma Adjusted KM-UCL (use when n<50) | 1.225 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.004 | Mean | 0.887 |
| Maximum | 27 | Median | 0.165 |
| SD | 2.497 | CV | 2.815 |
| k hat (MLE) | 0.36 | k star (bias corrected MLE) | 0.358 |
| Theta hat (MLE) | 2.465 | Theta star (bias corrected MLE) | 2.475 |
| nu hat (MLE) | 200.1 | nu star (bias corrected) | 199.2 |
| MLE Mean (bias corrected) | 0.887 | MLE Sd (bias corrected) | 1.482 |
| | | Adjusted Level of Significance (β) | 0.0491 |
| Approximate Chi Square Value (199.24, α) | 167.6 | Adjusted Chi Square Value (199.24, β) | 167.4 |
| 95% Gamma Approximate UCL (use when n>=50) | 1.055 | 95% Gamma Adjusted UCL (use when n<50) | 1.056 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.0423 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0591 | Detected Data appear Lognormal at 5% Significance Level | |

**Detected Data appear Lognormal at 5% Significance Level**

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.906 | Mean in Log Scale | -1.568 |
| SD in Original Scale | 2.491 | SD in Log Scale | 1.643 |
| 95% t UCL (assumes normality of ROS data) | 1.153 | 95% Percentile Bootstrap UCL | 1.16 |
| 95% BCA Bootstrap UCL | 1.259 | 95% Bootstrap t UCL | 1.258 |
| 95% H-UCL (Log ROS) | 1.054 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -1.595 | 95% H-UCL (KM -Log) | 1.173 |
| KM SD (logged) | 1.712 | 95% Critical H Value (KM-Log) | 2.813 |
| KM Standard Error of Mean (logged) | 0.109 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.952 | Mean in Log Scale | -1.388 |
| SD in Original Scale | 2.489 | SD in Log Scale | 1.608 |
| 95% t UCL (Assumes normality) | 1.199 | 95% H-Stat UCL | 1.181 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Lognormal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 97.5% KM (Chebyshev) UCL | 1.848 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**DIBENZO(A,H)ANTHRACENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 277 | Number of Distinct Observations | 138 |
| | | Number of Missing Observations | 2 |
| Number of Detects | 142 | Number of Non-Detects | 135 |
| Number of Distinct Detects | 95 | Number of Distinct Non-Detects | 63 |
| Minimum Detect | 0.005 | Minimum Non-Detect | 0.34 |
| Maximum Detect | 2.8 | Maximum Non-Detect | 9 |
| Variance Detects | 0.145 | Percent Non-Detects | 48.74% |
| Mean Detects | 0.273 | SD Detects | 0.38 |
| Median Detects | 0.104 | CV Detects | 1.393 |
| Skewness Detects | 3.131 | Kurtosis Detects | 14.2 |
| Mean of Logged Detects | -2.058 | SD of Logged Detects | 1.31 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.673 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.24 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0744 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.21 | Standard Error of Mean | 0.0198 |
| SD | 0.3 | 95% KM (BCA) UCL | 0.244 |
| 95% KM (t) UCL | 0.243 | 95% KM (Percentile Bootstrap) UCL | 0.241 |

| | | | |
|---|---|---|---|
| 95% KM (z) UCL | 0.243 | 95% KM Bootstrap t UCL | 0.246 |
| 90% KM Chebyshev UCL | 0.27 | 95% KM Chebyshev UCL | 0.296 |
| 97.5% KM Chebyshev UCL | 0.334 | 99% KM Chebyshev UCL | 0.407 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.533 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.794 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.141 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.0816 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.783 | k star (bias corrected MLE) | 0.771 |
| Theta hat (MLE) | 0.349 | Theta star (bias corrected MLE) | 0.354 |
| nu hat (MLE) | 222.3 | nu star (bias corrected) | 219 |
| MLE Mean (bias corrected) | 0.273 | MLE Sd (bias corrected) | 0.311 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.491 | nu hat (KM) | 272 |
| Approximate Chi Square Value (272.02, α) | 234.8 | Adjusted Chi Square Value (272.02, β) | 234.6 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.243 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.244 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.005 | Mean | 0.193 |
| Maximum | 2.8 | Median | 0.0935 |
| SD | 0.292 | CV | 1.514 |
| k hat (MLE) | 0.798 | k star (bias corrected MLE) | 0.792 |
| Theta hat (MLE) | 0.241 | Theta star (bias corrected MLE) | 0.243 |
| nu hat (MLE) | 442 | nu star (bias corrected) | 438.5 |
| MLE Mean (bias corrected) | 0.193 | MLE Sd (bias corrected) | 0.216 |
| | | Adjusted Level of Significance (β) | 0.0491 |
| Approximate Chi Square Value (438.51, α) | 391 | Adjusted Chi Square Value (438.51, β) | 390.7 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.216 | 95% Gamma Adjusted UCL (use when n<50) | 0.216 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.0739 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0744 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Approximate Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.191 | Mean in Log Scale | -2.229 |
| SD in Original Scale | 0.288 | SD in Log Scale | 1.037 |
| 95% t UCL (assumes normality of ROS data) | 0.22 | 95% Percentile Bootstrap UCL | 0.222 |
| 95% BCA Bootstrap UCL | 0.226 | 95% Bootstrap t UCL | 0.227 |
| 95% H-UCL (Log ROS) | 0.211 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -2.245 | 95% H-UCL (KM -Log) | 0.264 |
| KM SD (logged) | 1.218 | 95% Critical H Value (KM-Log) | 2.322 |
| KM Standard Error of Mean (logged) | 0.0975 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.357 | Mean in Log Scale | -1.603 |
| SD in Original Scale | 0.497 | SD in Log Scale | 1.144 |
| 95% t UCL (Assumes normality) | 0.407 | 95% H-Stat UCL | 0.452 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (Chebyshev) UCL | 0.296 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**INDENO(1,2,3-CD)PYRENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 277 | Number of Distinct Observations | 138 |
| | | Number of Missing Observations | 2 |
| Number of Detects | 208 | Number of Non-Detects | 69 |
| Number of Distinct Detects | 121 | Number of Distinct Non-Detects | 34 |
| Minimum Detect | 0.005 | Minimum Non-Detect | 0.34 |
| Maximum Detect | 7 | Maximum Non-Detect | 7.5 |
| Variance Detects | 0.767 | Percent Non-Detects | 24.91% |
| Mean Detects | 0.578 | SD Detects | 0.876 |
| Median Detects | 0.23 | CV Detects | 1.516 |
| Skewness Detects | 3.205 | Kurtosis Detects | 15.2 |
| Mean of Logged Detects | -1.574 | SD of Logged Detects | 1.63 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.659 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.257 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0614 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.477 | Standard Error of Mean | 0.0477 |
| SD | 0.784 | 95% KM (BCA) UCL | 0.56 |

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.555 | 95% KM (Percentile Bootstrap) UCL | 0.559 |
| 95% KM (z) UCL | 0.555 | 95% KM Bootstrap t UCL | 0.568 |
| 90% KM Chebyshev UCL | 0.62 | 95% KM Chebyshev UCL | 0.684 |
| 97.5% KM Chebyshev UCL | 0.774 | 99% KM Chebyshev UCL | 0.951 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.104 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.811 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.0937 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.0659 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.602 | k star (bias corrected MLE) | 0.597 |
| Theta hat (MLE) | 0.96 | Theta star (bias corrected MLE) | 0.969 |
| nu hat (MLE) | 250.5 | nu star (bias corrected) | 248.2 |
| MLE Mean (bias corrected) | 0.578 | MLE Sd (bias corrected) | 0.748 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.369 | nu hat (KM) | 204.5 |
| Approximate Chi Square Value (204.48, α) | 172.4 | Adjusted Chi Square Value (204.48, β) | 172.2 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.565 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.566 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.005 | Mean | 0.459 |
| Maximum | 7 | Median | 0.19 |
| SD | 0.788 | CV | 1.717 |
| k hat (MLE) | 0.54 | k star (bias corrected MLE) | 0.537 |
| Theta hat (MLE) | 0.85 | Theta star (bias corrected MLE) | 0.855 |
| nu hat (MLE) | 299.1 | nu star (bias corrected) | 297.2 |
| MLE Mean (bias corrected) | 0.459 | MLE Sd (bias corrected) | 0.626 |
| | | Adjusted Level of Significance (β) | 0.0491 |
| Approximate Chi Square Value (297.23, α) | 258.3 | Adjusted Chi Square Value (297.23, β) | 258.1 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.528 | 95% Gamma Adjusted UCL (use when n<50) | 0.528 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.105 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.0614 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.463 | Mean in Log Scale | -1.757 |
| SD in Original Scale | 0.785 | SD in Log Scale | 1.481 |
| 95% t UCL (assumes normality of ROS data) | 0.541 | 95% Percentile Bootstrap UCL | 0.54 |

| | | | |
|---|---|---|---|
| 95% BCA Bootstrap UCL | 0.556 | 95% Bootstrap t UCL | 0.557 |
| 95% H-UCL (Log ROS) | 0.65 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.524 | Mean in Log Scale | -1.51 |
| SD in Original Scale | 0.805 | SD in Log Scale | 1.446 |
| 95% t UCL (Assumes normality) | 0.603 | 95% H-Stat UCL | 0.783 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 97.5% KM (Chebyshev) UCL | 0.774 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**NAPHTHALENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 277 | Number of Distinct Observations | 130 |
| | | Number of Missing Observations | 2 |
| Number of Detects | 55 | Number of Non-Detects | 222 |
| Number of Distinct Detects | 44 | Number of Distinct Non-Detects | 89 |
| Minimum Detect | 0.004 | Minimum Non-Detect | 0.34 |
| Maximum Detect | 15 | Maximum Non-Detect | 9 |
| Variance Detects | 4.051 | Percent Non-Detects | 80.14% |
| Mean Detects | 0.375 | SD Detects | 2.013 |
| Median Detects | 0.062 | CV Detects | 5.374 |
| Skewness Detects | 7.371 | Kurtosis Detects | 54.54 |
| Mean of Logged Detects | -2.719 | SD of Logged Detects | 1.31 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.172 | **Normal GOF Test on Detected Observations Only** | |
| 5% Shapiro Wilk P Value | 0 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.451 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.119 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.143 | Standard Error of Mean | 0.0554 |
| SD | 0.9 | 95% KM (BCA) UCL | 0.266 |
| 95% KM (t) UCL | 0.235 | 95% KM (Percentile Bootstrap) UCL | 0.252 |
| 95% KM (z) UCL | 0.234 | 95% KM Bootstrap t UCL | 0.507 |

| | | | |
|---|---|---|---|
| 90% KM Chebyshev UCL | 0.309 | 95% KM Chebyshev UCL | 0.385 |
| 97.5% KM Chebyshev UCL | 0.489 | 99% KM Chebyshev UCL | 0.694 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 8.09 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.843 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.285 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.129 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.382 | k star (bias corrected MLE) | 0.373 |
| Theta hat (MLE) | 0.981 | Theta star (bias corrected MLE) | 1.004 |
| nu hat (MLE) | 42 | nu star (bias corrected) | 41.04 |
| MLE Mean (bias corrected) | 0.375 | MLE Sd (bias corrected) | 0.613 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.0253 | nu hat (KM) | 14.01 |
| Approximate Chi Square Value (14.01, α) | 6.578 | Adjusted Chi Square Value (14.01, β) | 6.551 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.305 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.306 |

Gamma (KM) may not be used when k hat (KM) is < 0.1

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.004 | Mean | 0.163 |
| Maximum | 15 | Median | 0.01 |
| SD | 0.921 | CV | 5.633 |
| k hat (MLE) | 0.389 | k star (bias corrected MLE) | 0.387 |
| Theta hat (MLE) | 0.42 | Theta star (bias corrected MLE) | 0.422 |
| nu hat (MLE) | 215.5 | nu star (bias corrected) | 214.5 |
| MLE Mean (bias corrected) | 0.163 | MLE Sd (bias corrected) | 0.263 |
| | | Adjusted Level of Significance (β) | 0.0491 |
| Approximate Chi Square Value (214.48, α) | 181.6 | Adjusted Chi Square Value (214.48, β) | 181.4 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.193 | 95% Gamma Adjusted UCL (use when n<50) | 0.193 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.13 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.119 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.13 | Mean in Log Scale | -2.851 |
| SD in Original Scale | 0.9 | SD in Log Scale | 0.834 |
| 95% t UCL (assumes normality of ROS data) | 0.219 | 95% Percentile Bootstrap UCL | 0.238 |
| 95% BCA Bootstrap UCL | 0.297 | 95% Bootstrap t UCL | 1.003 |
| 95% H-UCL (Log ROS) | 0.0905 | | |

**DL/2 Statistics**

| DL/2 Normal | | DL/2 Log-Transformed | |
|---|---|---|---|
| Mean in Original Scale | 0.503 | Mean in Log Scale | -1.299 |
| SD in Original Scale | 1.058 | SD in Log Scale | 1.108 |
| 95% t UCL (Assumes normality) | 0.608 | 95% H-Stat UCL | 0.584 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (BCA) UCL | 0.266 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

| Analyte | Exp Area | Matrix | Valid Obs | Rec. UCL | Method | Max | EPC=Max |
|---|---|---|---|---|---|---|---|
| ALUMINUM | KWL | Soil | 36 | 4586 | 90% Chebyshev (MVUE) UCL | 14200 | FALSE |
| ANTIMONY | KWL | Soil | 36 | 3.6 | 95% KM (t) UCL | 29 | FALSE |
| ARSENIC | KWL | Soil | 36 | 8.4 | 95% KM (BCA) UCL | 25 | FALSE |
| CHROMIUM | KWL | Soil | 36 | 18 | 95% Adjusted Gamma UCL | 66 | FALSE |
| COBALT | KWL | Soil | 36 | 0.87 | 95% KM (t) UCL | 3.6 | FALSE |
| CYANIDE | KWL | Soil | 36 | 0.37 | 95% KM (BCA) UCL | 2.7 | FALSE |
| IRON | KWL | Soil | 36 | 7843 | 95% Adjusted Gamma UCL | 21500 | FALSE |
| LEAD | KWL | Soil | 36 | 380 | 90% Chebyshev (MVUE) UCL | 1680 | FALSE |
| THALLIUM | KWL | Soil | 36 | NA | NA | 0.44 | TRUE |
| BENZO(A)PYRENE | KWL | Soil | 31 | 0.13 | 95% KM (t) UCL | 0.33 | FALSE |
| BENZO(B)FLUORANTHENE | KWL | Soil | 31 | 0.26 | 95% KM (Chebyshev) UCL | 0.99 | FALSE |

Soil_KWL_7.10.17.xlsx

## UCL Statistics for Data Sets with Non-Detects

| | |
|---|---|
| User Selected Options | |
| Date/Time of Computation | 7/10/2017 11:07:09 AM |
| From File | Soil_KWL_7.10.17.xlsx |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Number of Bootstrap Operations | 2000 |

## ALUMINUM

### General Statistics

| | | | |
|---|---|---|---|
| Total Number of Observations | 36 | Number of Distinct Observations | 36 |
| | | Number of Missing Observations | 0 |
| Minimum | 603 | Mean | 3222 |
| Maximum | 14200 | Median | 2283 |
| SD | 3154 | Std. Error of Mean | 525.7 |
| Coefficient of Variation | 0.979 | Skewness | 2.047 |

### Normal GOF Test

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.748 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.935 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.251 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.148 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

### Assuming Normal Distribution

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 4110 | 95% Adjusted-CLT UCL (Chen-1995) | 4278 |
| | | 95% Modified-t UCL (Johnson-1978) | 4140 |

### Gamma GOF Test

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.946 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.766 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.169 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.149 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

### Gamma Statistics

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.552 | k star (bias corrected MLE) | 1.442 |
| Theta hat (MLE) | 2075 | Theta star (bias corrected MLE) | 2235 |
| nu hat (MLE) | 111.8 | nu star (bias corrected) | 103.8 |
| MLE Mean (bias corrected) | 3222 | MLE Sd (bias corrected) | 2683 |
| | | Approximate Chi Square Value (0.05) | 81.28 |
| Adjusted Level of Significance | 0.0428 | Adjusted Chi Square Value | 80.38 |

### Assuming Gamma Distribution

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 4114 | 95% Adjusted Gamma UCL (use when n<50) | 4160 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.96 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.935 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.108 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.148 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 6.402 | Mean of logged Data | 7.722 |
| Maximum of Logged Data | 9.561 | SD of logged Data | 0.826 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 4319 | 90% Chebyshev (MVUE) UCL | 4586 |
| 95% Chebyshev (MVUE) UCL | 5241 | 97.5% Chebyshev (MVUE) UCL | 6151 |
| 99% Chebyshev (MVUE) UCL | 7939 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 4086 | 95% Jackknife UCL | 4110 |
| 95% Standard Bootstrap UCL | 4084 | 95% Bootstrap-t UCL | 4429 |
| 95% Hall's Bootstrap UCL | 4426 | 95% Percentile Bootstrap UCL | 4115 |
| 95% BCA Bootstrap UCL | 4225 | | |
| 90% Chebyshev(Mean, Sd) UCL | 4799 | 95% Chebyshev(Mean, Sd) UCL | 5513 |
| 97.5% Chebyshev(Mean, Sd) UCL | 6505 | 99% Chebyshev(Mean, Sd) UCL | 8453 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% H-UCL | 4319 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

ProUCL computes and outputs H-statistic based UCLs for historical reasons only.
H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.
It is therefore recommended to avoid the use of H-statistic based 95% UCLs.
Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.

**ANTIMONY**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 36 | Number of Distinct Observations | 30 |
| Number of Detects | 16 | Number of Non-Detects | 20 |
| Number of Distinct Detects | 14 | Number of Distinct Non-Detects | 19 |
| Minimum Detect | 0.78 | Minimum Non-Detect | 0.44 |
| Maximum Detect | 29 | Maximum Non-Detect | 29.4 |

| | | | |
|---|---|---|---|
| Variance Detects | 47.76 | Percent Non-Detects | 55.56% |
| Mean Detects | 3.993 | SD Detects | 6.911 |
| Median Detects | 1.7 | CV Detects | 1.731 |
| Skewness Detects | 3.575 | Kurtosis Detects | 13.4 |
| Mean of Logged Detects | 0.804 | SD of Logged Detects | 0.909 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.462 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.887 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.358 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.222 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 2.178 | Standard Error of Mean | 0.852 |
| SD | 4.852 | 95% KM (BCA) UCL | 4.022 |
| 95% KM (t) UCL | 3.617 | 95% KM (Percentile Bootstrap) UCL | 3.769 |
| 95% KM (z) UCL | 3.579 | 95% KM Bootstrap t UCL | 7.58 |
| 90% KM Chebyshev UCL | 4.733 | 95% KM Chebyshev UCL | 5.89 |
| 97.5% KM Chebyshev UCL | 7.497 | 99% KM Chebyshev UCL | 10.65 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.87 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.764 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.284 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.221 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.995 | k star (bias corrected MLE) | 0.85 |
| Theta hat (MLE) | 4.013 | Theta star (bias corrected MLE) | 4.697 |
| nu hat (MLE) | 31.83 | nu star (bias corrected) | 27.2 |
| MLE Mean (bias corrected) | 3.993 | MLE Sd (bias corrected) | 4.331 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.202 | nu hat (KM) | 14.51 |
| Approximate Chi Square Value (14.51, α) | 6.923 | Adjusted Chi Square Value (14.51, β) | 6.685 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 4.566 | 95% Gamma Adjusted KM-UCL (use when n<50) | 4.728 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 1.78 |
| Maximum | 29 | Median | 0.01 |
| SD | 4.95 | CV | 2.781 |
| k hat (MLE) | 0.255 | k star (bias corrected MLE) | 0.252 |
| Theta hat (MLE) | 6.983 | Theta star (bias corrected MLE) | 7.058 |

| | | | |
|---|---|---|---|
| nu hat (MLE) | 18.35 | nu star (bias corrected) | 18.16 |
| MLE Mean (bias corrected) | 1.78 | MLE Sd (bias corrected) | 3.545 |
| | | Adjusted Level of Significance (β) | 0.0428 |
| Approximate Chi Square Value (18.16, α) | 9.504 | Adjusted Chi Square Value (18.16, β) | 9.22 |
| 95% Gamma Approximate UCL (use when n>=50) | 3.4 | 95% Gamma Adjusted UCL (use when n<50) | 3.506 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.836 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.887 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.219 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.222 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Approximate Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 1.988 | Mean in Log Scale | -0.229 |
| SD in Original Scale | 4.878 | SD in Log Scale | 1.157 |
| 95% t UCL (assumes normality of ROS data) | 3.362 | 95% Percentile Bootstrap UCL | 3.478 |
| 95% BCA Bootstrap UCL | 4.708 | 95% Bootstrap t UCL | 7.16 |
| 95% H-UCL (Log ROS) | 2.566 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | 0.0286 | 95% H-UCL (KM -Log) | 2.512 |
| KM SD (logged) | 0.994 | 95% Critical H Value (KM-Log) | 2.376 |
| KM Standard Error of Mean (logged) | 0.183 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 2.788 | Mean in Log Scale | 0.201 |
| SD in Original Scale | 5.27 | SD in Log Scale | 1.191 |
| 95% t UCL (Assumes normality) | 4.272 | 95% H-Stat UCL | 4.202 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 3.617 | 95% KM (% Bootstrap) UCL | 3.769 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**ARSENIC**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 36 | Number of Distinct Observations | 33 |
| Number of Detects | 32 | Number of Non-Detects | 4 |
| Number of Distinct Detects | 29 | Number of Distinct Non-Detects | 4 |

| | | | |
|---|---|---|---|
| Minimum Detect | 0.68 | Minimum Non-Detect | 0.67 |
| Maximum Detect | 25.2 | Maximum Non-Detect | 2.8 |
| Variance Detects | 44.98 | Percent Non-Detects | 11.11% |
| Mean Detects | 7.013 | SD Detects | 6.707 |
| Median Detects | 4.325 | CV Detects | 0.956 |
| Skewness Detects | 1.613 | Kurtosis Detects | 2.031 |
| Mean of Logged Detects | 1.523 | SD of Logged Detects | 0.974 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.793 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.93 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.206 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.157 | Detected Data Not Normal at 5% Significance Level | |

**Detected Data Not Normal at 5% Significance Level**

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 6.321 | Standard Error of Mean | 1.105 |
| SD | 6.525 | 95% KM (BCA) UCL | 8.416 |
| 95% KM (t) UCL | 8.188 | 95% KM (Percentile Bootstrap) UCL | 8.324 |
| 95% KM (z) UCL | 8.138 | 95% KM Bootstrap t UCL | 8.687 |
| 90% KM Chebyshev UCL | 9.636 | 95% KM Chebyshev UCL | 11.14 |
| 97.5% KM Chebyshev UCL | 13.22 | 99% KM Chebyshev UCL | 17.31 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.469 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.768 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.113 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.159 | Detected data appear Gamma Distributed at 5% Significance Level | |

**Detected data appear Gamma Distributed at 5% Significance Level**

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.32 | k star (bias corrected MLE) | 1.217 |
| Theta hat (MLE) | 5.314 | Theta star (bias corrected MLE) | 5.763 |
| nu hat (MLE) | 84.46 | nu star (bias corrected) | 77.87 |
| MLE Mean (bias corrected) | 7.013 | MLE Sd (bias corrected) | 6.357 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.938 | nu hat (KM) | 67.57 |
| Approximate Chi Square Value (67.57, α) | 49.65 | Adjusted Chi Square Value (67.57, β) | 48.95 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 8.602 | 95% Gamma Adjusted KM-UCL (use when n<50) | 8.725 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 6.234 |
| Maximum | 25.2 | Median | 4 |
| SD | 6.695 | CV | 1.074 |

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.622 | k star (bias corrected MLE) | 0.589 |
| Theta hat (MLE) | 10.02 | Theta star (bias corrected MLE) | 10.59 |
| nu hat (MLE) | 44.8 | nu star (bias corrected) | 42.4 |
| MLE Mean (bias corrected) | 6.234 | MLE Sd (bias corrected) | 8.125 |
| | | Adjusted Level of Significance (β) | 0.0428 |
| Approximate Chi Square Value (42.40, α) | 28.47 | Adjusted Chi Square Value (42.40, β) | 27.95 |
| 95% Gamma Approximate UCL (use when n>=50) | 9.284 | 95% Gamma Adjusted UCL (use when n<50) | 9.457 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.965 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.93 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.129 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.157 | Detected Data appear Lognormal at 5% Significance Level | |

**Detected Data appear Lognormal at 5% Significance Level**

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 6.31 | Mean in Log Scale | 1.304 |
| SD in Original Scale | 6.627 | SD in Log Scale | 1.12 |
| 95% t UCL (assumes normality of ROS data) | 8.176 | 95% Percentile Bootstrap UCL | 8.222 |
| 95% BCA Bootstrap UCL | 8.436 | 95% Bootstrap t UCL | 8.771 |
| 95% H-UCL (Log ROS) | 11.12 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | 1.322 | 95% H-UCL (KM -Log) | 10.42 |
| KM SD (logged) | 1.072 | 95% Critical H Value (KM-Log) | 2.466 |
| KM Standard Error of Mean (logged) | 0.182 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 6.304 | Mean in Log Scale | 1.282 |
| SD in Original Scale | 6.633 | SD in Log Scale | 1.165 |
| 95% t UCL (Assumes normality) | 8.172 | 95% H-Stat UCL | 11.8 |

**DL/2 is not a recommended method, provided for comparisons and historical reasons**

**Nonparametric Distribution Free UCL Statistics**

**Detected Data appear Gamma Distributed at 5% Significance Level**

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (BCA) UCL | 8.416 | 95% GROS Adjusted Gamma UCL | 9.457 |
| 95% Adjusted Gamma KM-UCL | 8.725 | | |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**CHROMIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 36 | Number of Distinct Observations | 35 |
| | | Number of Missing Observations | 0 |
| Minimum | 2.1 | Mean | 14.19 |
| Maximum | 65.6 | Median | 9.15 |
| SD | 13.73 | Std. Error of Mean | 2.288 |
| Coefficient of Variation | 0.967 | Skewness | 2.187 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.768 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.935 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.189 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.148 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 18.06 | 95% Adjusted-CLT UCL (Chen-1995) | 18.85 |
| | | 95% Modified-t UCL (Johnson-1978) | 18.2 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.455 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.767 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.106 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.15 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.489 | k star (bias corrected MLE) | 1.383 |
| Theta hat (MLE) | 9.533 | Theta star (bias corrected MLE) | 10.26 |
| nu hat (MLE) | 107.2 | nu star (bias corrected) | 99.59 |
| MLE Mean (bias corrected) | 14.19 | MLE Sd (bias corrected) | 12.07 |
| | | Approximate Chi Square Value (0.05) | 77.57 |
| Adjusted Level of Significance | 0.0428 | Adjusted Chi Square Value | 76.68 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50) | 18.22 | 95% Adjusted Gamma UCL (use when n<50) | 18.43 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.976 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.935 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.0813 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.148 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 0.742 | Mean of logged Data | 2.281 |
| Maximum of Logged Data | 4.184 | SD of logged Data | 0.877 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 20.07 | 90% Chebyshev (MVUE) UCL | 21.19 |
| 95% Chebyshev (MVUE) UCL | 24.37 | 97.5% Chebyshev (MVUE) UCL | 28.78 |
| 99% Chebyshev (MVUE) UCL | 37.44 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 17.95 | 95% Jackknife UCL | 18.06 |
| 95% Standard Bootstrap UCL | 17.93 | 95% Bootstrap-t UCL | 19.41 |
| 95% Hall's Bootstrap UCL | 20.52 | 95% Percentile Bootstrap UCL | 18.06 |
| 95% BCA Bootstrap UCL | 18.9 | | |
| 90% Chebyshev(Mean, Sd) UCL | 21.06 | 95% Chebyshev(Mean, Sd) UCL | 24.16 |
| 97.5% Chebyshev(Mean, Sd) UCL | 28.48 | 99% Chebyshev(Mean, Sd) UCL | 36.96 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Adjusted Gamma UCL | 18.43 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**COBALT**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 36 | Number of Distinct Observations | 30 |
| Number of Detects | 7 | Number of Non-Detects | 29 |
| Number of Distinct Detects | 7 | Number of Distinct Non-Detects | 24 |
| Minimum Detect | 0.36 | Minimum Non-Detect | 0.49 |
| Maximum Detect | 3.6 | Maximum Non-Detect | 24.5 |
| Variance Detects | 1.405 | Percent Non-Detects | 80.56% |
| Mean Detects | 1.436 | SD Detects | 1.185 |
| Median Detects | 1 | CV Detects | 0.825 |
| Skewness Detects | 1.128 | Kurtosis Detects | 0.539 |
| Mean of Logged Detects | 0.0592 | SD of Logged Detects | 0.854 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.876 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.803 | Detected Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.215 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.335 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.639 | Standard Error of Mean | 0.136 |
| SD | 0.684 | 95% KM (BCA) UCL | 0.954 |
| 95% KM (t) UCL | 0.868 | 95% KM (Percentile Bootstrap) UCL | 0.899 |
| 95% KM (z) UCL | 0.862 | 95% KM Bootstrap t UCL | 0.99 |
| 90% KM Chebyshev UCL | 1.046 | 95% KM Chebyshev UCL | 1.23 |
| 97.5% KM Chebyshev UCL | 1.486 | 99% KM Chebyshev UCL | 1.988 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.285 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.717 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.215 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.316 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.799 | k star (bias corrected MLE) | 1.123 |
| Theta hat (MLE) | 0.798 | Theta star (bias corrected MLE) | 1.279 |
| nu hat (MLE) | 25.19 | nu star (bias corrected) | 15.73 |
| MLE Mean (bias corrected) | 1.436 | MLE Sd (bias corrected) | 1.355 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.874 | nu hat (KM) | 62.94 |
| Approximate Chi Square Value (62.94, α) | 45.69 | Adjusted Chi Square Value (62.94, β) | 45.03 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.88 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.893 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 0.321 |
| Maximum | 3.6 | Median | 0.01 |
| SD | 0.745 | CV | 2.322 |
| k hat (MLE) | 0.348 | k star (bias corrected MLE) | 0.338 |
| Theta hat (MLE) | 0.921 | Theta star (bias corrected MLE) | 0.95 |
| nu hat (MLE) | 25.07 | nu star (bias corrected) | 24.32 |
| MLE Mean (bias corrected) | 0.321 | MLE Sd (bias corrected) | 0.552 |
| | | Adjusted Level of Significance (β) | 0.0428 |
| Approximate Chi Square Value (24.32, α) | 14.09 | Adjusted Chi Square Value (24.32, β) | 13.74 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.554 | 95% Gamma Adjusted UCL (use when n<50) | 0.568 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.951 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.803 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.189 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.335 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.551 | Mean in Log Scale | -0.886 |
| SD in Original Scale | 0.663 | SD in Log Scale | 0.627 |
| 95% t UCL (assumes normality of ROS data) | 0.738 | 95% Percentile Bootstrap UCL | 0.735 |
| 95% BCA Bootstrap UCL | 0.82 | 95% Bootstrap t UCL | 0.957 |
| 95% H-UCL (Log ROS) | 0.621 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -0.702 | 95% H-UCL (KM -Log) | 0.714 |
| KM SD (logged) | 0.583 | 95% Critical H Value (KM-Log) | 1.974 |
| KM Standard Error of Mean (logged) | 0.127 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 1.243 | Mean in Log Scale | -0.47 |
| SD in Original Scale | 2.171 | SD in Log Scale | 1.027 |
| 95% t UCL (Assumes normality) | 1.854 | 95% H-Stat UCL | 1.611 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.868 | 95% KM (Percentile Bootstrap) UCL | 0.899 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**CYANIDE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 36 | Number of Distinct Observations | 20 |
| Number of Detects | 10 | Number of Non-Detects | 26 |
| Number of Distinct Detects | 10 | Number of Distinct Non-Detects | 11 |
| Minimum Detect | 0.13 | Minimum Non-Detect | 0.03 |
| Maximum Detect | 2.7 | Maximum Non-Detect | 3.1 |
| Variance Detects | 0.776 | Percent Non-Detects | 72.22% |
| Mean Detects | 0.647 | SD Detects | 0.881 |
| Median Detects | 0.205 | CV Detects | 1.362 |
| Skewness Detects | 1.929 | Kurtosis Detects | 2.852 |
| Mean of Logged Detects | -1.073 | SD of Logged Detects | 1.093 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.652 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.842 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.371 | **Lilliefors GOF Test** | |

| | | | |
|---|---|---|---|
| 5% Lilliefors Critical Value | 0.28 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.212 | Standard Error of Mean | 0.094 |
| SD | 0.526 | 95% KM (BCA) UCL | 0.37 |
| 95% KM (t) UCL | 0.37 | 95% KM (Percentile Bootstrap) UCL | 0.376 |
| 95% KM (z) UCL | 0.366 | 95% KM Bootstrap t UCL | 0.789 |
| 90% KM Chebyshev UCL | 0.494 | 95% KM Chebyshev UCL | 0.621 |
| 97.5% KM Chebyshev UCL | 0.799 | 99% KM Chebyshev UCL | 1.147 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.098 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.751 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.282 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.275 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.916 | k star (bias corrected MLE) | 0.708 |
| Theta hat (MLE) | 0.707 | Theta star (bias corrected MLE) | 0.914 |
| nu hat (MLE) | 18.31 | nu star (bias corrected) | 14.15 |
| MLE Mean (bias corrected) | 0.647 | MLE Sd (bias corrected) | 0.769 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.162 | nu hat (KM) | 11.63 |
| Approximate Chi Square Value (11.63, α) | 4.983 | Adjusted Chi Square Value (11.63, β) | 4.786 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.494 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.514 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 0.187 |
| Maximum | 2.7 | Median | 0.01 |
| SD | 0.532 | CV | 2.848 |
| k hat (MLE) | 0.346 | k star (bias corrected MLE) | 0.336 |
| Theta hat (MLE) | 0.54 | Theta star (bias corrected MLE) | 0.557 |
| nu hat (MLE) | 24.91 | nu star (bias corrected) | 24.17 |
| MLE Mean (bias corrected) | 0.187 | MLE Sd (bias corrected) | 0.323 |
| | | Adjusted Level of Significance (β) | 0.0428 |
| Approximate Chi Square Value (24.17, α) | 13.98 | Adjusted Chi Square Value (24.17, β) | 13.63 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.323 | 95% Gamma Adjusted UCL (use when n<50) | 0.332 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.822 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.842 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.242 | **Lilliefors GOF Test** | |

| | | | |
|---|---|---|---|
| 5% Lilliefors Critical Value | 0.28 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Approximate Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.193 | Mean in Log Scale | -3.451 |
| SD in Original Scale | 0.53 | SD in Log Scale | 1.803 |
| 95% t UCL (assumes normality of ROS data) | 0.342 | 95% Percentile Bootstrap UCL | 0.367 |
| 95% BCA Bootstrap UCL | 0.407 | 95% Bootstrap t UCL | 0.805 |
| 95% H-UCL (Log ROS) | 0.458 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -2.762 | 95% H-UCL (KM -Log) | 0.24 |
| KM SD (logged) | 1.243 | 95% Critical H Value (KM-Log) | 2.673 |
| KM Standard Error of Mean (logged) | 0.227 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.269 | Mean in Log Scale | -2.687 |
| SD in Original Scale | 0.572 | SD in Log Scale | 1.556 |
| 95% t UCL (Assumes normality) | 0.43 | 95% H-Stat UCL | 0.514 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (BCA) UCL | 0.37 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

## IRON

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 36 | Number of Distinct Observations | 36 |
| | | Number of Missing Observations | 0 |
| Minimum | 651 | Mean | 6079 |
| Maximum | 21500 | Median | 3650 |
| SD | 5307 | Std. Error of Mean | 884.5 |
| Coefficient of Variation | 0.873 | Skewness | 1.429 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.828 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.935 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.201 | **Lilliefors GOF Test** | |

| | | | |
|---|---|---|---|
| 5% Lilliefors Critical Value | 0.148 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
|---|---|---|---|
| 95% Student's-t UCL | 7574 | 95% Adjusted-CLT UCL (Chen-1995) | 7759 |
| | | 95% Modified-t UCL (Johnson-1978) | 7609 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.551 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.766 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.145 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.149 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.562 | k star (bias corrected MLE) | 1.45 |
| Theta hat (MLE) | 3892 | Theta star (bias corrected MLE) | 4191 |
| nu hat (MLE) | 112.5 | nu star (bias corrected) | 104.4 |
| MLE Mean (bias corrected) | 6079 | MLE Sd (bias corrected) | 5048 |
| | | Approximate Chi Square Value (0.05) | 81.85 |
| Adjusted Level of Significance | 0.0428 | Adjusted Chi Square Value | 80.94 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50) | 7756 | 95% Adjusted Gamma UCL (use when n<50) | 7843 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.976 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.935 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.0943 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.148 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 6.479 | Mean of logged Data | 8.36 |
| Maximum of Logged Data | 9.976 | SD of logged Data | 0.873 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 8710 | 90% Chebyshev (MVUE) UCL | 9200 |
| 95% Chebyshev (MVUE) UCL | 10575 | 97.5% Chebyshev (MVUE) UCL | 12483 |
| 99% Chebyshev (MVUE) UCL | 16231 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 7534 | 95% Jackknife UCL | 7574 |
| 95% Standard Bootstrap UCL | 7511 | 95% Bootstrap-t UCL | 7792 |
| 95% Hall's Bootstrap UCL | 7797 | 95% Percentile Bootstrap UCL | 7586 |

| | | | |
|---|---|---|---|
| 95% BCA Bootstrap UCL | 7719 | | |
| 90% Chebyshev(Mean, Sd) UCL | 8733 | 95% Chebyshev(Mean, Sd) UCL | 9935 |
| 97.5% Chebyshev(Mean, Sd) UCL | 11603 | 99% Chebyshev(Mean, Sd) UCL | 14880 |

**Suggested UCL to Use**

95% Adjusted Gamma UCL 7843

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**LEAD**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 36 | Number of Distinct Observations | 35 |
| | | Number of Missing Observations | 0 |
| Minimum | 6.7 | Mean | 212.7 |
| Maximum | 1680 | Median | 113.5 |
| SD | 324.3 | Std. Error of Mean | 54.04 |
| Coefficient of Variation | 1.524 | Skewness | 3.178 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.616 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.935 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.292 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.148 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
|---|---|---|---|
| 95% Student's-t UCL | 304.1 | 95% Adjusted-CLT UCL (Chen-1995) | 332.2 |
| | | 95% Modified-t UCL (Johnson-1978) | 308.8 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.916 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.787 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.16 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.152 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.774 | k star (bias corrected MLE) | 0.728 |
| Theta hat (MLE) | 274.8 | Theta star (bias corrected MLE) | 292.2 |
| nu hat (MLE) | 55.73 | nu star (bias corrected) | 52.42 |
| MLE Mean (bias corrected) | 212.7 | MLE Sd (bias corrected) | 249.3 |
| | | Approximate Chi Square Value (0.05) | 36.79 |
| Adjusted Level of Significance | 0.0428 | Adjusted Chi Square Value | 36.19 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 303.1 | 95% Adjusted Gamma UCL (use when n<50) | 308.1 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.982 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.935 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.0866 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.148 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 1.902 | Mean of logged Data | 4.59 |
| Maximum of Logged Data | 7.427 | SD of logged Data | 1.272 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 396.2 | 90% Chebyshev (MVUE) UCL | 379.5 |
| 95% Chebyshev (MVUE) UCL | 455 | 97.5% Chebyshev (MVUE) UCL | 559.8 |
| 99% Chebyshev (MVUE) UCL | 765.6 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 301.6 | 95% Jackknife UCL | 304.1 |
| 95% Standard Bootstrap UCL | 300 | 95% Bootstrap-t UCL | 382.6 |
| 95% Hall's Bootstrap UCL | 645.9 | 95% Percentile Bootstrap UCL | 306.6 |
| 95% BCA Bootstrap UCL | 342.9 | | |
| 90% Chebyshev(Mean, Sd) UCL | 374.9 | 95% Chebyshev(Mean, Sd) UCL | 448.3 |
| 97.5% Chebyshev(Mean, Sd) UCL | 550.3 | 99% Chebyshev(Mean, Sd) UCL | 750.5 |

**Suggested UCL to Use**

95% H-UCL 396.2

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

ProUCL computes and outputs H-statistic based UCLs for historical reasons only.
H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.
It is therefore recommended to avoid the use of H-statistic based 95% UCLs.
Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.

**THALLIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 36 | Number of Distinct Observations | 21 |

| | | | |
|---|---|---|---|
| Number of Detects | 1 | Number of Non-Detects | 35 |
| Number of Distinct Detects | 1 | Number of Distinct Non-Detects | 20 |

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!

It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable THALLIUM was not processed!

BENZO(A)PYRENE

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 31 | Number of Distinct Observations | 28 |
| Number of Detects | 19 | Number of Non-Detects | 12 |
| Number of Distinct Detects | 18 | Number of Distinct Non-Detects | 10 |
| Minimum Detect | 0.005 | Minimum Non-Detect | 0.34 |
| Maximum Detect | 0.33 | Maximum Non-Detect | 1.2 |
| Variance Detects | 0.00861 | Percent Non-Detects | 38.71% |
| Mean Detects | 0.0905 | SD Detects | 0.0928 |
| Median Detects | 0.056 | CV Detects | 1.025 |
| Skewness Detects | 1.257 | Kurtosis Detects | 1.089 |
| Mean of Logged Detects | -3.072 | SD of Logged Detects | 1.339 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.854 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.901 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.183 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.203 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Approximate Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.0905 | Standard Error of Mean | 0.0213 |
| SD | 0.0903 | 95% KM (BCA) UCL | 0.128 |
| 95% KM (t) UCL | 0.127 | 95% KM (Percentile Bootstrap) UCL | 0.125 |
| 95% KM (z) UCL | 0.126 | 95% KM Bootstrap t UCL | 0.139 |
| 90% KM Chebyshev UCL | 0.154 | 95% KM Chebyshev UCL | 0.183 |
| 97.5% KM Chebyshev UCL | 0.223 | 99% KM Chebyshev UCL | 0.302 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.371 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.774 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.141 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.205 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.876 | k star (bias corrected MLE) | 0.773 |
| Theta hat (MLE) | 0.103 | Theta star (bias corrected MLE) | 0.117 |

| | | | |
|---|---|---|---|
| nu hat (MLE) | 33.3 | nu star (bias corrected) | 29.38 |
| MLE Mean (bias corrected) | 0.0905 | MLE Sd (bias corrected) | 0.103 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 1.004 | nu hat (KM) | 62.25 |
| Approximate Chi Square Value (62.25, α) | 45.1 | Adjusted Chi Square Value (62.25, β) | 44.29 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.125 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.127 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.005 | Mean | 0.0805 |
| Maximum | 0.33 | Median | 0.0621 |
| SD | 0.0744 | CV | 0.925 |
| k hat (MLE) | 1.256 | k star (bias corrected MLE) | 1.156 |
| Theta hat (MLE) | 0.064 | Theta star (bias corrected MLE) | 0.0696 |
| nu hat (MLE) | 77.88 | nu star (bias corrected) | 71.68 |
| MLE Mean (bias corrected) | 0.0805 | MLE Sd (bias corrected) | 0.0748 |
| | | Adjusted Level of Significance (β) | 0.0413 |
| Approximate Chi Square Value (71.68, α) | 53.18 | Adjusted Chi Square Value (71.68, β) | 52.3 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.108 | 95% Gamma Adjusted UCL (use when n<50) | 0.11 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.929 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.901 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.142 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.203 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.0747 | Mean in Log Scale | -3.072 |
| SD in Original Scale | 0.0756 | SD in Log Scale | 1.063 |
| 95% t UCL (assumes normality of ROS data) | 0.0977 | 95% Percentile Bootstrap UCL | 0.0981 |
| 95% BCA Bootstrap UCL | 0.103 | 95% Bootstrap t UCL | 0.106 |
| 95% H-UCL (Log ROS) | 0.132 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -3.072 | 95% H-UCL (KM -Log) | 0.211 |
| KM SD (logged) | 1.303 | 95% Critical H Value (KM-Log) | 2.807 |
| KM Standard Error of Mean (logged) | 0.307 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.16 | Mean in Log Scale | -2.411 |
| SD in Original Scale | 0.133 | SD in Log Scale | 1.351 |
| 95% t UCL (Assumes normality) | 0.2 | 95% H-Stat UCL | 0.454 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.127 | 95% KM (Percentile Bootstrap) UCL | 0.125 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**BENZO(B)FLUORANTHENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 31 | Number of Distinct Observations | 28 |
| Number of Detects | 24 | Number of Non-Detects | 7 |
| Number of Distinct Detects | 22 | Number of Distinct Non-Detects | 6 |
| Minimum Detect | 0.006 | Minimum Non-Detect | 0.39 |
| Maximum Detect | 0.99 | Maximum Non-Detect | 1.2 |
| Variance Detects | 0.0399 | Percent Non-Detects | 22.58% |
| Mean Detects | 0.116 | SD Detects | 0.2 |
| Median Detects | 0.064 | CV Detects | 1.718 |
| Skewness Detects | 3.933 | Kurtosis Detects | 17.35 |
| Mean of Logged Detects | -3.019 | SD of Logged Detects | 1.386 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.52 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.916 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.291 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.181 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.109 | Standard Error of Mean | 0.034 |
| SD | 0.178 | 95% KM (BCA) UCL | 0.17 |
| 95% KM (t) UCL | 0.166 | 95% KM (Percentile Bootstrap) UCL | 0.169 |
| 95% KM (z) UCL | 0.164 | 95% KM Bootstrap t UCL | 0.237 |
| 90% KM Chebyshev UCL | 0.21 | 95% KM Chebyshev UCL | 0.257 |
| 97.5% KM Chebyshev UCL | 0.321 | 99% KM Chebyshev UCL | 0.446 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.604 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.787 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.121 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.186 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.698 | k star (bias corrected MLE) | 0.638 |
| Theta hat (MLE) | 0.166 | Theta star (bias corrected MLE) | 0.182 |
| nu hat (MLE) | 33.5 | nu star (bias corrected) | 30.64 |
| MLE Mean (bias corrected) | 0.116 | MLE Sd (bias corrected) | 0.145 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.37 | nu hat (KM) | 22.96 |
| Approximate Chi Square Value (22.96, α) | 13.06 | Adjusted Chi Square Value (22.96, β) | 12.65 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.191 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.197 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.006 | Mean | 0.102 |
| Maximum | 0.99 | Median | 0.0517 |
| SD | 0.177 | CV | 1.748 |
| k hat (MLE) | 0.782 | k star (bias corrected MLE) | 0.728 |
| Theta hat (MLE) | 0.13 | Theta star (bias corrected MLE) | 0.14 |
| nu hat (MLE) | 48.47 | nu star (bias corrected) | 45.11 |
| MLE Mean (bias corrected) | 0.102 | MLE Sd (bias corrected) | 0.119 |
| | | Adjusted Level of Significance (β) | 0.0413 |
| Approximate Chi Square Value (45.11, α) | 30.71 | Adjusted Chi Square Value (45.11, β) | 30.05 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.149 | 95% Gamma Adjusted UCL (use when n<50) | 0.152 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.947 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.916 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.136 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.181 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.101 | Mean in Log Scale | -3.04 |
| SD in Original Scale | 0.177 | SD in Log Scale | 1.224 |
| 95% t UCL (assumes normality of ROS data) | 0.155 | 95% Percentile Bootstrap UCL | 0.158 |
| 95% BCA Bootstrap UCL | 0.195 | 95% Bootstrap t UCL | 0.239 |
| 95% H-UCL (Log ROS) | 0.185 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -3.045 | 95% H-UCL (KM -Log) | 0.231 |
| KM SD (logged) | 1.333 | 95% Critical H Value (KM-Log) | 2.847 |
| KM Standard Error of Mean (logged) | 0.274 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.156 | Mean in Log Scale | -2.632 |

| | | | |
|---|---|---|---|
| SD in Original Scale | 0.2 | SD in Log Scale | 1.426 |
| 95% t UCL (Assumes normality) | 0.217 | 95% H-Stat UCL | 0.431 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Gamma Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (Chebyshev) UCL | 0.257 | 95% GROS Adjusted Gamma UCL | 0.152 |
| 95% Adjusted Gamma KM-UCL | 0.197 | | |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

# ProUCL Output for Surface Water Data

| Analyte | Exp Area | Matrix | Valid Obs | Rec. UCL | Method | Max | EPC=Max |
|---|---|---|---|---|---|---|---|
| ALUMINUM | BWL | Surface water | 27 | 1.3 | 95% Chebyshev (Mean, Sd) UCL | 5.3 | FALSE |
| ANTIMONY | BWL | Surface water | 27 | 0.0012 | 95% KM (BCA) UCL | 0.0042 | FALSE |
| ARSENIC | BWL | Surface water | 27 | 0.031 | 95% KM (Chebyshev) UCL | 0.11 | FALSE |
| CADMIUM | BWL | Surface water | 27 | 0.00062 | 95% KM (t) UCL | 0.0031 | FALSE |
| CHROMIUM | BWL | Surface water | 27 | 0.0045 | 95% KM (t) UCL | 0.025 | FALSE |
| COBALT | BWL | Surface water | 27 | 0.0010 | 95% KM (t) UCL | 0.0031 | FALSE |
| CYANIDE | BWL | Surface water | 27 | 0.0020 | 95% KM (t) UCL | 0.0068 | FALSE |
| IRON | BWL | Surface water | 27 | 6.5 | 95% Chebyshev (Mean, Sd) UCL | 23 | FALSE |
| LEAD | BWL | Surface water | 27 | 0.097 | 97.5% KM (Chebyshev) UCL | 0.30 | FALSE |
| MANGANESE | BWL | Surface water | 27 | 0.070 | 95% Adjusted Gamma UCL | 0.18 | FALSE |
| THALLIUM | BWL | Surface water | 27 | 0.0012 | 95% KM (t) UCL | 0.0056 | FALSE |
| VANADIUM | BWL | Surface water | 27 | 0.0025 | 95% KM (BCA) UCL | 0.014 | FALSE |
| BENZO(A)PYRENE | BWL | Surface water | 27 | NA | NA | 0.000034 | TRUE |

SW_BWL_7.10.17.xlsx

## UCL Statistics for Data Sets with Non-Detects

| | |
|---|---|
| User Selected Options | |
| Date/Time of Computation | 7/10/2017 11:14:51 AM |
| From File | SW_BWL_7.10.17.xlsx |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Number of Bootstrap Operations | 2000 |

## ALUMINUM

### General Statistics

| | | | |
|---|---|---|---|
| Total Number of Observations | 27 | Number of Distinct Observations | 25 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.0495 | Mean | 0.436 |
| Maximum | 5.25 | Median | 0.189 |
| SD | 1.012 | Std. Error of Mean | 0.195 |
| Coefficient of Variation | 2.319 | Skewness | 4.513 |

### Normal GOF Test

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.375 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.923 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.376 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.171 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

### Assuming Normal Distribution

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 0.768 | 95% Adjusted-CLT UCL (Chen-1995) | 0.937 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.797 |

### Gamma GOF Test

| | | | |
|---|---|---|---|
| A-D Test Statistic | 3.03 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.786 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.317 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.175 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

### Gamma Statistics

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.727 | k star (bias corrected MLE) | 0.671 |
| Theta hat (MLE) | 0.6 | Theta star (bias corrected MLE) | 0.651 |
| nu hat (MLE) | 39.24 | nu star (bias corrected) | 36.21 |
| MLE Mean (bias corrected) | 0.436 | MLE Sd (bias corrected) | 0.533 |
| | | Approximate Chi Square Value (0.05) | 23.44 |
| Adjusted Level of Significance | 0.0401 | Adjusted Chi Square Value | 22.78 |

### Assuming Gamma Distribution

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 0.674 | 95% Adjusted Gamma UCL (use when n<50) | 0.694 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.87 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.923 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.221 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.171 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -3.007 | Mean of logged Data | -1.657 |
| Maximum of Logged Data | 1.658 | SD of logged Data | 1.047 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.561 | 90% Chebyshev (MVUE) UCL | 0.544 |
| 95% Chebyshev (MVUE) UCL | 0.645 | 97.5% Chebyshev (MVUE) UCL | 0.785 |
| 99% Chebyshev (MVUE) UCL | 1.061 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.757 | 95% Jackknife UCL | 0.768 |
| 95% Standard Bootstrap UCL | 0.753 | 95% Bootstrap-t UCL | 2.095 |
| 95% Hall's Bootstrap UCL | 1.872 | 95% Percentile Bootstrap UCL | 0.791 |
| 95% BCA Bootstrap UCL | 1.024 | | |
| 90% Chebyshev(Mean, Sd) UCL | 1.02 | 95% Chebyshev(Mean, Sd) UCL | 1.285 |
| 97.5% Chebyshev(Mean, Sd) UCL | 1.652 | 99% Chebyshev(Mean, Sd) UCL | 2.374 |

**Suggested UCL to Use**

95% Chebyshev (Mean, Sd) UCL 1.285

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**ANTIMONY**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 27 | Number of Distinct Observations | 9 |
| Number of Detects | 8 | Number of Non-Detects | 19 |
| Number of Distinct Detects | 7 | Number of Distinct Non-Detects | 3 |
| Minimum Detect | 1.60E-04 | Minimum Non-Detect | 0.0027 |
| Maximum Detect | 0.0042 | Maximum Non-Detect | 0.06 |
| Variance Detects | 2.34E-06 | Percent Non-Detects | 70.37% |
| Mean Detects | 0.00106 | SD Detects | 0.00153 |
| Median Detects | 2.90E-04 | CV Detects | 1.443 |
| Skewness Detects | 1.719 | Kurtosis Detects | 1.799 |
| Mean of Logged Detects | -7.624 | SD of Logged Detects | 1.218 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.64 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.818 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.433 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.313 | Detected Data Not Normal at 5% Significance Level | |

**Detected Data Not Normal at 5% Significance Level**

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 6.62E-04 | Standard Error of Mean | 2.91E-04 |
| SD | 0.00109 | 95% KM (BCA) UCL | 0.00115 |
| 95% KM (t) UCL | 0.00116 | 95% KM (Percentile Bootstrap) UCL | 0.00118 |
| 95% KM (z) UCL | 0.00114 | 95% KM Bootstrap t UCL | 0.00686 |
| 90% KM Chebyshev UCL | 0.00154 | 95% KM Chebyshev UCL | 0.00193 |
| 97.5% KM Chebyshev UCL | 0.00248 | 99% KM Chebyshev UCL | 0.00356 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.306 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.744 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.424 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.304 | Detected Data Not Gamma Distributed at 5% Significance Level | |

**Detected Data Not Gamma Distributed at 5% Significance Level**

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.77 | k star (bias corrected MLE) | 0.565 |
| Theta hat (MLE) | 0.00138 | Theta star (bias corrected MLE) | 0.00188 |
| nu hat (MLE) | 12.32 | nu star (bias corrected) | 9.032 |
| MLE Mean (bias corrected) | 0.00106 | MLE Sd (bias corrected) | 0.00141 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.37 | nu hat (KM) | 19.97 |
| Approximate Chi Square Value (19.97, α) | 10.83 | Adjusted Chi Square Value (19.97, β) | 10.4 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.00122 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.00127 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 1.60E-04 | Mean | 0.00735 |
| Maximum | 0.01 | Median | 0.01 |
| SD | 0.00423 | CV | 0.576 |
| k hat (MLE) | 0.985 | k star (bias corrected MLE) | 0.901 |
| Theta hat (MLE) | 0.00746 | Theta star (bias corrected MLE) | 0.00816 |
| nu hat (MLE) | 53.21 | nu star (bias corrected) | 48.63 |
| MLE Mean (bias corrected) | 0.00735 | MLE Sd (bias corrected) | 0.00775 |
| | | Adjusted Level of Significance (β) | 0.0401 |
| Approximate Chi Square Value (48.63, α) | 33.62 | Adjusted Chi Square Value (48.63, β) | 32.82 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0106 | 95% Gamma Adjusted UCL (use when n<50) | 0.0109 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.75 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.818 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.376 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.313 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 6.38E-04 | Mean in Log Scale | -7.882 |
| SD in Original Scale | 9.01E-04 | SD in Log Scale | 0.944 |
| 95% t UCL (assumes normality of ROS data) | 9.34E-04 | 95% Percentile Bootstrap UCL | 9.51E-04 |
| 95% BCA Bootstrap UCL | 0.00104 | 95% Bootstrap t UCL | 0.00137 |
| 95% H-UCL (Log ROS) | 9.28E-04 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.0027 | Mean in Log Scale | -6.589 |
| SD in Original Scale | 0.00554 | SD in Log Scale | 1.098 |
| 95% t UCL (Assumes normality) | 0.00452 | 95% H-Stat UCL | 0.00445 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (BCA) UCL | 0.00115 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**ARSENIC**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 27 | Number of Distinct Observations | 23 |
| Number of Detects | 26 | Number of Non-Detects | 1 |
| Number of Distinct Detects | 23 | Number of Distinct Non-Detects | 1 |
| Minimum Detect | 0.004 | Minimum Non-Detect | 0.0048 |
| Maximum Detect | 0.108 | Maximum Non-Detect | 0.0048 |
| Variance Detects | 4.17E-04 | Percent Non-Detects | 3.70% |
| Mean Detects | 0.014 | SD Detects | 0.0204 |
| Median Detects | 0.00845 | CV Detects | 1.456 |
| Skewness Detects | 4.258 | Kurtosis Detects | 19.51 |
| Mean of Logged Detects | -4.636 | SD of Logged Detects | 0.712 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.44 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.92 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.356 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.174 | Detected Data Not Normal at 5% Significance Level | |

**Detected Data Not Normal at 5% Significance Level**

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.0137 | Standard Error of Mean | 0.00388 |
| SD | 0.0197 | 95% KM (BCA) UCL | 0.0208 |
| 95% KM (t) UCL | 0.0203 | 95% KM (Percentile Bootstrap) UCL | 0.0207 |
| 95% KM (z) UCL | 0.02 | 95% KM Bootstrap t UCL | 0.0382 |
| 90% KM Chebyshev UCL | 0.0253 | 95% KM Chebyshev UCL | 0.0306 |
| 97.5% KM Chebyshev UCL | 0.0379 | 99% KM Chebyshev UCL | 0.0522 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.396 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.762 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.233 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.174 | Detected Data Not Gamma Distributed at 5% Significance Level | |

**Detected Data Not Gamma Distributed at 5% Significance Level**

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.497 | k star (bias corrected MLE) | 1.35 |
| Theta hat (MLE) | 0.00937 | Theta star (bias corrected MLE) | 0.0104 |
| nu hat (MLE) | 77.85 | nu star (bias corrected) | 70.2 |
| MLE Mean (bias corrected) | 0.014 | MLE Sd (bias corrected) | 0.0121 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.479 | nu hat (KM) | 25.84 |
| Approximate Chi Square Value (25.84, α) | 15.26 | Adjusted Chi Square Value (25.84, β) | 14.74 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.0231 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.024 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.004 | Mean | 0.0139 |
| Maximum | 0.108 | Median | 0.0085 |
| SD | 0.02 | CV | 1.444 |
| k hat (MLE) | 1.542 | k star (bias corrected MLE) | 1.396 |
| Theta hat (MLE) | 0.009 | Theta star (bias corrected MLE) | 0.00995 |
| nu hat (MLE) | 83.29 | nu star (bias corrected) | 75.37 |
| MLE Mean (bias corrected) | 0.0139 | MLE Sd (bias corrected) | 0.0118 |
| | | Adjusted Level of Significance (β) | 0.0401 |
| Approximate Chi Square Value (75.37, α) | 56.38 | Adjusted Chi Square Value (75.37, β) | 55.33 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0186 | 95% Gamma Adjusted UCL (use when n<50) | 0.0189 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.847 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.92 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.183 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.174 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.0136 | Mean in Log Scale | -4.687 |
| SD in Original Scale | 0.0202 | SD in Log Scale | 0.747 |
| 95% t UCL (assumes normality of ROS data) | 0.0202 | 95% Percentile Bootstrap UCL | 0.0206 |
| 95% BCA Bootstrap UCL | 0.0251 | 95% Bootstrap t UCL | 0.0394 |
| 95% H-UCL (Log ROS) | 0.0168 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.0136 | Mean in Log Scale | -4.688 |
| SD in Original Scale | 0.0202 | SD in Log Scale | 0.749 |
| 95% t UCL (Assumes normality) | 0.0202 | 95% H-Stat UCL | 0.0169 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (Chebyshev) UCL | 0.0306 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**CADMIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 27 | Number of Distinct Observations | 8 |
| Number of Detects | 7 | Number of Non-Detects | 20 |
| Number of Distinct Detects | 7 | Number of Distinct Non-Detects | 3 |
| Minimum Detect | 2.00E-04 | Minimum Non-Detect | 2.00E-04 |
| Maximum Detect | 0.0031 | Maximum Non-Detect | 0.001 |
| Variance Detects | 1.04E-06 | Percent Non-Detects | 74.07% |
| Mean Detects | 9.04E-04 | SD Detects | 0.00102 |
| Median Detects | 3.70E-04 | CV Detects | 1.13 |
| Skewness Detects | 2.124 | Kurtosis Detects | 4.771 |
| Mean of Logged Detects | -7.432 | SD of Logged Detects | 0.942 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.705 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.803 | Detected Data Not Normal at 5% Significance Level | |

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.32 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.335 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Approximate Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 4.17E-04 | Standard Error of Mean | 1.21E-04 |
| SD | 5.69E-04 | 95% KM (BCA) UCL | 6.43E-04 |
| 95% KM (t) UCL | 6.22E-04 | 95% KM (Percentile Bootstrap) UCL | 6.25E-04 |
| 95% KM (z) UCL | 6.15E-04 | 95% KM Bootstrap t UCL | 8.96E-04 |
| 90% KM Chebyshev UCL | 7.78E-04 | 95% KM Chebyshev UCL | 9.42E-04 |
| 97.5% KM Chebyshev UCL | 0.00117 | 99% KM Chebyshev UCL | 0.00162 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.579 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.723 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.293 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.318 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.322 | k star (bias corrected MLE) | 0.851 |
| Theta hat (MLE) | 6.84E-04 | Theta star (bias corrected MLE) | 0.00106 |
| nu hat (MLE) | 18.51 | nu star (bias corrected) | 11.91 |
| MLE Mean (bias corrected) | 9.04E-04 | MLE Sd (bias corrected) | 9.80E-04 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.536 | nu hat (KM) | 28.97 |
| Approximate Chi Square Value (28.97, α) | 17.68 | Adjusted Chi Square Value (28.97, β) | 17.12 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 6.82E-04 | 95% Gamma Adjusted KM-UCL (use when n<50) | 7.05E-04 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 2.00E-04 | Mean | 0.00764 |
| Maximum | 0.01 | Median | 0.01 |
| SD | 0.00409 | CV | 0.535 |
| k hat (MLE) | 1.217 | k star (bias corrected MLE) | 1.107 |
| Theta hat (MLE) | 0.00628 | Theta star (bias corrected MLE) | 0.0069 |
| nu hat (MLE) | 65.74 | nu star (bias corrected) | 59.77 |
| MLE Mean (bias corrected) | 0.00764 | MLE Sd (bias corrected) | 0.00726 |
| | | Adjusted Level of Significance (β) | 0.0401 |
| Approximate Chi Square Value (59.77, α) | 42.99 | Adjusted Chi Square Value (59.77, β) | 42.08 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0106 | 95% Gamma Adjusted UCL (use when n<50) | 0.0109 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.904 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.803 | Detected Data appear Lognormal at 5% Significance Level | |

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.262 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.335 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 3.45E-04 | Mean in Log Scale | -8.727 |
| SD in Original Scale | 6.07E-04 | SD in Log Scale | 1.188 |
| 95% t UCL (assumes normality of ROS data) | 5.45E-04 | 95% Percentile Bootstrap UCL | 5.49E-04 |
| 95% BCA Bootstrap UCL | 7.01E-04 | 95% Bootstrap t UCL | 8.62E-04 |
| 95% H-UCL (Log ROS) | 6.27E-04 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -8.121 | 95% H-UCL (KM -Log) | 4.81E-04 |
| KM SD (logged) | 0.652 | 95% Critical H Value (KM-Log) | 2.112 |
| KM Standard Error of Mean (logged) | 0.153 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 4.99E-04 | Mean in Log Scale | -7.924 |
| SD in Original Scale | 5.64E-04 | SD in Log Scale | 0.785 |
| 95% t UCL (Assumes normality) | 6.85E-04 | 95% H-Stat UCL | 6.97E-04 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 6.22E-04 | 95% KM (Percentile Bootstrap) UCL | 6.25E-04 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**CHROMIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 27 | Number of Distinct Observations | 17 |
| Number of Detects | 16 | Number of Non-Detects | 11 |
| Number of Distinct Detects | 15 | Number of Distinct Non-Detects | 2 |
| Minimum Detect | 6.60E-04 | Minimum Non-Detect | 8.00E-04 |
| Maximum Detect | 0.0253 | Maximum Non-Detect | 0.002 |
| Variance Detects | 3.71E-05 | Percent Non-Detects | 40.74% |
| Mean Detects | 0.00408 | SD Detects | 0.00609 |
| Median Detects | 0.00175 | CV Detects | 1.492 |
| Skewness Detects | 3.179 | Kurtosis Detects | 11.04 |
| Mean of Logged Detects | -6.059 | SD of Logged Detects | 0.97 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.558 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.887 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.296 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.222 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.00286 | Standard Error of Mean | 9.52E-04 |
| SD | 0.00478 | 95% KM (BCA) UCL | 0.00462 |
| 95% KM (t) UCL | 0.00448 | 95% KM (Percentile Bootstrap) UCL | 0.00447 |
| 95% KM (z) UCL | 0.00442 | 95% KM Bootstrap t UCL | 0.00755 |
| 90% KM Chebyshev UCL | 0.00571 | 95% KM Chebyshev UCL | 0.00701 |
| 97.5% KM Chebyshev UCL | 0.0088 | 99% KM Chebyshev UCL | 0.0123 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.183 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.763 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.259 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.221 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.031 | k star (bias corrected MLE) | 0.879 |
| Theta hat (MLE) | 0.00396 | Theta star (bias corrected MLE) | 0.00464 |
| nu hat (MLE) | 33 | nu star (bias corrected) | 28.14 |
| MLE Mean (bias corrected) | 0.00408 | MLE Sd (bias corrected) | 0.00435 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.357 | nu hat (KM) | 19.26 |
| Approximate Chi Square Value (19.26, α) | 10.31 | Adjusted Chi Square Value (19.26, β) | 9.891 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.00534 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.00556 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 6.60E-04 | Mean | 0.00649 |
| Maximum | 0.0253 | Median | 0.0074 |
| SD | 0.00549 | CV | 0.846 |
| k hat (MLE) | 1.305 | k star (bias corrected MLE) | 1.185 |
| Theta hat (MLE) | 0.00497 | Theta star (bias corrected MLE) | 0.00548 |
| nu hat (MLE) | 70.48 | nu star (bias corrected) | 63.98 |
| MLE Mean (bias corrected) | 0.00649 | MLE Sd (bias corrected) | 0.00597 |
| | | Adjusted Level of Significance (β) | 0.0401 |
| Approximate Chi Square Value (63.98, α) | 46.58 | Adjusted Chi Square Value (63.98, β) | 45.63 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.00892 | 95% Gamma Adjusted UCL (use when n<50) | 0.0091 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.912 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.887 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.209 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.222 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.00286 | Mean in Log Scale | -6.461 |
| SD in Original Scale | 0.00489 | SD in Log Scale | 0.982 |
| 95% t UCL (assumes normality of ROS data) | 0.00446 | 95% Percentile Bootstrap UCL | 0.00457 |
| 95% BCA Bootstrap UCL | 0.0057 | 95% Bootstrap t UCL | 0.00758 |
| 95% H-UCL (Log ROS) | 0.0041 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -6.408 | 95% H-UCL (KM -Log) | 0.00361 |
| KM SD (logged) | 0.872 | 95% Critical H Value (KM-Log) | 2.36 |
| KM Standard Error of Mean (logged) | 0.182 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.00276 | Mean in Log Scale | -6.507 |
| SD in Original Scale | 0.00491 | SD in Log Scale | 0.957 |
| 95% t UCL (Assumes normality) | 0.00437 | 95% H-Stat UCL | 0.00375 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Lognormal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.00448 | 95% KM (% Bootstrap) UCL | 0.00447 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**COBALT**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 27 | Number of Distinct Observations | 14 |
| Number of Detects | 11 | Number of Non-Detects | 16 |
| Number of Distinct Detects | 11 | Number of Distinct Non-Detects | 3 |
| Minimum Detect | 2.40E-04 | Minimum Non-Detect | 9.00E-04 |
| Maximum Detect | 0.0031 | Maximum Non-Detect | 0.0014 |
| Variance Detects | 7.83E-07 | Percent Non-Detects | 59.26% |
| Mean Detects | 0.0011 | SD Detects | 8.85E-04 |
| Median Detects | 8.30E-04 | CV Detects | 0.805 |

| | | | |
|---|---|---|---|
| Skewness Detects | 1.285 | Kurtosis Detects | 1.234 |
| Mean of Logged Detects | -7.099 | SD of Logged Detects | 0.799 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.856 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.85 | Detected Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.237 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.267 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 7.69E-04 | Standard Error of Mean | 1.40E-04 |
| SD | 6.27E-04 | 95% KM (BCA) UCL | 0.00101 |
| 95% KM (t) UCL | 0.00101 | 95% KM (Percentile Bootstrap) UCL | 0.001 |
| 95% KM (z) UCL | 1.00E-03 | 95% KM Bootstrap t UCL | 0.00108 |
| 90% KM Chebyshev UCL | 0.00119 | 95% KM Chebyshev UCL | 0.00138 |
| 97.5% KM Chebyshev UCL | 0.00164 | 99% KM Chebyshev UCL | 0.00216 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.347 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.74 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.18 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.259 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.898 | k star (bias corrected MLE) | 1.441 |
| Theta hat (MLE) | 5.79E-04 | Theta star (bias corrected MLE) | 7.63E-04 |
| nu hat (MLE) | 41.76 | nu star (bias corrected) | 31.7 |
| MLE Mean (bias corrected) | 0.0011 | MLE Sd (bias corrected) | 9.16E-04 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 1.507 | nu hat (KM) | 81.4 |
| Approximate Chi Square Value (81.40, α) | 61.61 | Adjusted Chi Square Value (81.40, β) | 60.51 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.00102 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.00103 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 2.40E-04 | Mean | 0.00637 |
| Maximum | 0.01 | Median | 0.01 |
| SD | 0.00449 | CV | 0.704 |
| k hat (MLE) | 1.018 | k star (bias corrected MLE) | 0.93 |
| Theta hat (MLE) | 0.00626 | Theta star (bias corrected MLE) | 0.00685 |
| nu hat (MLE) | 55 | nu star (bias corrected) | 50.22 |
| MLE Mean (bias corrected) | 0.00637 | MLE Sd (bias corrected) | 0.00661 |
| | | Adjusted Level of Significance (β) | 0.0401 |

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (50.22, α) | 34.95 | Adjusted Chi Square Value (50.22, β) | 34.13 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.00916 | 95% Gamma Adjusted UCL (use when n<50) | 0.00938 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.962 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.85 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.149 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.267 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 7.83E-04 | Mean in Log Scale | -7.385 |
| SD in Original Scale | 6.41E-04 | SD in Log Scale | 0.662 |
| 95% t UCL (assumes normality of ROS data) | 9.93E-04 | 95% Percentile Bootstrap UCL | 1.00E-03 |
| 95% BCA Bootstrap UCL | 0.00105 | 95% Bootstrap t UCL | 0.00112 |
| 95% H-UCL (Log ROS) | 0.00102 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -7.397 | 95% H-UCL (KM -Log) | 9.70E-04 |
| KM SD (logged) | 0.632 | 95% Critical H Value (KM-Log) | 2.093 |
| KM Standard Error of Mean (logged) | 0.173 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 8.00E-04 | Mean in Log Scale | -7.308 |
| SD in Original Scale | 6.12E-04 | SD in Log Scale | 0.552 |
| 95% t UCL (Assumes normality) | 0.001 | 95% H-Stat UCL | 9.71E-04 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.00101 | 95% KM (Percentile Bootstrap) UCL | 0.001 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**CYANIDE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 27 | Number of Distinct Observations | 8 |
| Number of Detects | 5 | Number of Non-Detects | 22 |
| Number of Distinct Detects | 5 | Number of Distinct Non-Detects | 3 |
| Minimum Detect | 8.40E-04 | Minimum Non-Detect | 8.60E-04 |
| Maximum Detect | 0.0068 | Maximum Non-Detect | 0.01 |
| Variance Detects | 7.05E-06 | Percent Non-Detects | 81.48% |

| | | | |
|---|---|---|---|
| Mean Detects | 0.00354 | SD Detects | 0.00266 |
| Median Detects | 0.0022 | CV Detects | 0.751 |
| Skewness Detects | 0.496 | Kurtosis Detects | -2.711 |
| Mean of Logged Detects | -5.917 | SD of Logged Detects | 0.867 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.864 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.762 | Detected Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.293 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.396 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.0014 | Standard Error of Mean | 3.52E-04 |
| SD | 0.00154 | 95% KM (BCA) UCL | 0.00199 |
| 95% KM (t) UCL | 0.002 | 95% KM (Percentile Bootstrap) UCL | 0.00199 |
| 95% KM (z) UCL | 0.00198 | 95% KM Bootstrap t UCL | 0.00256 |
| 90% KM Chebyshev UCL | 0.00246 | 95% KM Chebyshev UCL | 0.00294 |
| 97.5% KM Chebyshev UCL | 0.0036 | 99% KM Chebyshev UCL | 0.0049 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.363 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.685 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.249 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.361 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.987 | k star (bias corrected MLE) | 0.928 |
| Theta hat (MLE) | 0.00178 | Theta star (bias corrected MLE) | 0.00381 |
| nu hat (MLE) | 19.87 | nu star (bias corrected) | 9.28 |
| MLE Mean (bias corrected) | 0.00354 | MLE Sd (bias corrected) | 0.00367 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.827 | nu hat (KM) | 44.68 |
| Approximate Chi Square Value (44.68, α) | 30.35 | Adjusted Chi Square Value (44.68, β) | 29.59 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.00206 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.00212 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 8.40E-04 | Mean | 0.0088 |
| Maximum | 0.01 | Median | 0.01 |
| SD | 0.00276 | CV | 0.314 |
| k hat (MLE) | 4.493 | k star (bias corrected MLE) | 4.019 |
| Theta hat (MLE) | 0.00196 | Theta star (bias corrected MLE) | 0.00219 |
| nu hat (MLE) | 242.6 | nu star (bias corrected) | 217 |

| | | | |
|---|---|---|---|
| MLE Mean (bias corrected) | 0.0088 | MLE Sd (bias corrected) | 0.00439 |
| | | Adjusted Level of Significance (β) | 0.0401 |
| Approximate Chi Square Value (217.01, α) | 183.9 | Adjusted Chi Square Value (217.01, β) | 182 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0104 | 95% Gamma Adjusted UCL (use when n<50) | 0.0105 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.923 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.762 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.22 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.396 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.00134 | Mean in Log Scale | -7.015 |
| SD in Original Scale | 0.00156 | SD in Log Scale | 0.866 |
| 95% t UCL (assumes normality of ROS data) | 0.00186 | 95% Percentile Bootstrap UCL | 0.00186 |
| 95% BCA Bootstrap UCL | 0.00206 | 95% Bootstrap t UCL | 0.00258 |
| 95% H-UCL (Log ROS) | 0.00195 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -6.839 | 95% H-UCL (KM -Log) | 0.00162 |
| KM SD (logged) | 0.591 | 95% Critical H Value (KM-Log) | 2.053 |
| KM Standard Error of Mean (logged) | 0.135 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.00156 | Mean in Log Scale | -7.048 |
| SD in Original Scale | 0.00201 | SD in Log Scale | 0.983 |
| 95% t UCL (Assumes normality) | 0.00222 | 95% H-Stat UCL | 0.00228 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.002 | 95% KM (Percentile Bootstrap) UCL | 0.00199 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**IRON**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 27 | Number of Distinct Observations | 25 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.796 | Mean | 2.895 |

| | | | |
|---|---|---|---|
| Maximum | 22.7 | Median | 1.47 |
| SD | 4.291 | Std. Error of Mean | 0.826 |
| Coefficient of Variation | 1.482 | Skewness | 4.153 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.453 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.923 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.312 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.171 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 4.304 | 95% Adjusted-CLT UCL (Chen-1995) | 4.959 |
| | | 95% Modified-t UCL (Johnson-1978) | 4.414 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.821 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.765 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.261 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.172 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.402 | k star (bias corrected MLE) | 1.271 |
| Theta hat (MLE) | 2.065 | Theta star (bias corrected MLE) | 2.278 |
| nu hat (MLE) | 75.73 | nu star (bias corrected) | 68.65 |
| MLE Mean (bias corrected) | 2.895 | MLE Sd (bias corrected) | 2.568 |
| | | Approximate Chi Square Value (0.05) | 50.58 |
| Adjusted Level of Significance | 0.0401 | Adjusted Chi Square Value | 49.59 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 3.93 | 95% Adjusted Gamma UCL (use when n<50) | 4.009 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.828 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.923 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.215 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.171 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -0.228 | Mean of logged Data | 0.666 |
| Maximum of Logged Data | 3.122 | SD of logged Data | 0.741 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 3.527 | 90% Chebyshev (MVUE) UCL | 3.703 |
| 95% Chebyshev (MVUE) UCL | 4.235 | 97.5% Chebyshev (MVUE) UCL | 4.973 |
| 99% Chebyshev (MVUE) UCL | 6.424 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 4.254 | 95% Jackknife UCL | 4.304 |
| 95% Standard Bootstrap UCL | 4.244 | 95% Bootstrap-t UCL | 7.59 |
| 95% Hall's Bootstrap UCL | 9.471 | 95% Percentile Bootstrap UCL | 4.381 |
| 95% BCA Bootstrap UCL | 5.301 | | |
| 90% Chebyshev(Mean, Sd) UCL | 5.373 | 95% Chebyshev(Mean, Sd) UCL | 6.495 |
| 97.5% Chebyshev(Mean, Sd) UCL | 8.052 | 99% Chebyshev(Mean, Sd) UCL | 11.11 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 6.495 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**LEAD**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 27 | Number of Distinct Observations | 24 |
| Number of Detects | 25 | Number of Non-Detects | 2 |
| Number of Distinct Detects | 22 | Number of Distinct Non-Detects | 2 |
| Minimum Detect | 0.0026 | Minimum Non-Detect | 0.0018 |
| Maximum Detect | 0.297 | Maximum Non-Detect | 0.0024 |
| Variance Detects | 0.00371 | Percent Non-Detects | 7.41% |
| Mean Detects | 0.0276 | SD Detects | 0.0609 |
| Median Detects | 0.0075 | CV Detects | 2.209 |
| Skewness Detects | 3.981 | Kurtosis Detects | 17.26 |
| Mean of Logged Detects | -4.593 | SD of Logged Detects | 1.217 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.439 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.918 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.353 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.177 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.0257 | Standard Error of Mean | 0.0113 |
| SD | 0.0578 | 95% KM (BCA) UCL | 0.0485 |
| 95% KM (t) UCL | 0.045 | 95% KM (Percentile Bootstrap) UCL | 0.0465 |
| 95% KM (z) UCL | 0.0443 | 95% KM Bootstrap t UCL | 0.0825 |
| 90% KM Chebyshev UCL | 0.0597 | 95% KM Chebyshev UCL | 0.0751 |
| 97.5% KM Chebyshev UCL | 0.0965 | 99% KM Chebyshev UCL | 0.139 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.616 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.796 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.305 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.183 | Detected Data Not Gamma Distributed at 5% Significance Level | |

**Detected Data Not Gamma Distributed at 5% Significance Level**

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.615 | k star (bias corrected MLE) | 0.568 |
| Theta hat (MLE) | 0.0448 | Theta star (bias corrected MLE) | 0.0485 |
| nu hat (MLE) | 30.74 | nu star (bias corrected) | 28.39 |
| MLE Mean (bias corrected) | 0.0276 | MLE Sd (bias corrected) | 0.0366 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.197 | nu hat (KM) | 10.64 |
| Approximate Chi Square Value (10.64, α) | 4.347 | Adjusted Chi Square Value (10.64, β) | 4.092 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.0628 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.0667 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.0026 | Mean | 0.0263 |
| Maximum | 0.297 | Median | 0.0085 |
| SD | 0.0587 | CV | 2.234 |
| k hat (MLE) | 0.641 | k star (bias corrected MLE) | 0.595 |
| Theta hat (MLE) | 0.0409 | Theta star (bias corrected MLE) | 0.0441 |
| nu hat (MLE) | 34.64 | nu star (bias corrected) | 32.12 |
| MLE Mean (bias corrected) | 0.0263 | MLE Sd (bias corrected) | 0.034 |
| | | Adjusted Level of Significance (β) | 0.0401 |
| Approximate Chi Square Value (32.12, α) | 20.17 | Adjusted Chi Square Value (32.12, β) | 19.56 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0418 | 95% Gamma Adjusted UCL (use when n<50) | 0.0431 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.867 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.918 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.214 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.177 | Detected Data Not Lognormal at 5% Significance Level | |

**Detected Data Not Lognormal at 5% Significance Level**

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.0256 | Mean in Log Scale | -4.796 |
| SD in Original Scale | 0.0589 | SD in Log Scale | 1.38 |
| 95% t UCL (assumes normality of ROS data) | 0.0449 | 95% Percentile Bootstrap UCL | 0.0459 |
| 95% BCA Bootstrap UCL | 0.0586 | 95% Bootstrap t UCL | 0.0798 |
| 95% H-UCL (Log ROS) | 0.0489 | | |

**DL/2 Statistics**

| DL/2 Normal | | DL/2 Log-Transformed | |
|---|---|---|---|
| Mean in Original Scale | 0.0256 | Mean in Log Scale | -4.761 |
| SD in Original Scale | 0.0589 | SD in Log Scale | 1.318 |
| 95% t UCL (Assumes normality) | 0.0449 | 95% H-Stat UCL | 0.0439 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 97.5% KM (Chebyshev) UCL | 0.0965 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**MANGANESE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 27 | Number of Distinct Observations | 26 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.0122 | Mean | 0.053 |
| Maximum | 0.179 | Median | 0.0441 |
| SD | 0.0423 | Std. Error of Mean | 0.00814 |
| Coefficient of Variation | 0.797 | Skewness | 1.509 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.831 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.923 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.182 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.171 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| 95% Normal UCL | | 95% UCLs (Adjusted for Skewness) | |
|---|---|---|---|
| 95% Student's-t UCL | 0.0669 | 95% Adjusted-CLT UCL (Chen-1995) | 0.0689 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.0673 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.646 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.758 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.151 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.171 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.859 | k star (bias corrected MLE) | 1.677 |
| Theta hat (MLE) | 0.0285 | Theta star (bias corrected MLE) | 0.0316 |
| nu hat (MLE) | 100.4 | nu star (bias corrected) | 90.54 |
| MLE Mean (bias corrected) | 0.053 | MLE Sd (bias corrected) | 0.041 |
| | | Approximate Chi Square Value (0.05) | 69.6 |
| Adjusted Level of Significance | 0.0401 | Adjusted Chi Square Value | 68.43 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50) | 0.069 | 95% Adjusted Gamma UCL (use when n<50) | 0.0702 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.932 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.923 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.158 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.171 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -4.406 | Mean of logged Data | -3.229 |
| Maximum of Logged Data | -1.72 | SD of logged Data | 0.793 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.0771 | 90% Chebyshev (MVUE) UCL | 0.0803 |
| 95% Chebyshev (MVUE) UCL | 0.0924 | 97.5% Chebyshev (MVUE) UCL | 0.109 |
| 99% Chebyshev (MVUE) UCL | 0.142 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.0664 | 95% Jackknife UCL | 0.0669 |
| 95% Standard Bootstrap UCL | 0.0661 | 95% Bootstrap-t UCL | 0.0701 |
| 95% Hall's Bootstrap UCL | 0.0752 | 95% Percentile Bootstrap UCL | 0.0667 |
| 95% BCA Bootstrap UCL | 0.0699 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.0774 | 95% Chebyshev(Mean, Sd) UCL | 0.0885 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.104 | 99% Chebyshev(Mean, Sd) UCL | 0.134 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Adjusted Gamma UCL | 0.0702 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**THALLIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 27 | Number of Distinct Observations | 7 |
| Number of Detects | 6 | Number of Non-Detects | 21 |
| Number of Distinct Detects | 4 | Number of Distinct Non-Detects | 3 |
| Minimum Detect | 3.40E-05 | Minimum Non-Detect | 0.001 |
| Maximum Detect | 0.0056 | Maximum Non-Detect | 0.0046 |
| Variance Detects | 8.57E-06 | Percent Non-Detects | 77.78% |
| Mean Detects | 0.0027 | SD Detects | 0.00293 |
| Median Detects | 0.00247 | CV Detects | 1.082 |
| Skewness Detects | 0.0303 | Kurtosis Detects | -3.252 |
| Mean of Logged Detects | -7.651 | SD of Logged Detects | 2.656 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.722 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.788 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.318 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.362 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Approximate Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 6.34E-04 | Standard Error of Mean | 3.54E-04 |
| SD | 0.00168 | 95% KM (BCA) UCL | N/A |
| 95% KM (t) UCL | 0.00124 | 95% KM (Percentile Bootstrap) UCL | N/A |
| 95% KM (z) UCL | 0.00122 | 95% KM Bootstrap t UCL | N/A |
| 90% KM Chebyshev UCL | 0.00169 | 95% KM Chebyshev UCL | 0.00218 |
| 97.5% KM Chebyshev UCL | 0.00284 | 99% KM Chebyshev UCL | 0.00415 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.966 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.754 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.334 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.353 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data follow Appr. Gamma Distribution at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.381 | k star (bias corrected MLE) | 0.302 |
| Theta hat (MLE) | 0.00709 | Theta star (bias corrected MLE) | 0.00896 |
| nu hat (MLE) | 4.577 | nu star (bias corrected) | 3.622 |
| MLE Mean (bias corrected) | 0.0027 | MLE Sd (bias corrected) | 0.00492 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.143 | nu hat (KM) | 7.725 |
| Approximate Chi Square Value (7.73, α) | 2.577 | Adjusted Chi Square Value (7.73, β) | 2.391 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.0019 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.00205 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 3.40E-05 | Mean | 0.00838 |
| Maximum | 0.01 | Median | 0.01 |
| SD | 0.00335 | CV | 0.399 |
| k hat (MLE) | 1.138 | k star (bias corrected MLE) | 1.036 |
| Theta hat (MLE) | 0.00737 | Theta star (bias corrected MLE) | 0.00809 |
| nu hat (MLE) | 61.43 | nu star (bias corrected) | 55.94 |
| MLE Mean (bias corrected) | 0.00838 | MLE Sd (bias corrected) | 0.00823 |
| | | Adjusted Level of Significance (β) | 0.0401 |
| Approximate Chi Square Value (55.94, α) | 39.75 | Adjusted Chi Square Value (55.94, β) | 38.88 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0118 | 95% Gamma Adjusted UCL (use when n<50) | 0.0121 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.717 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.788 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.31 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.362 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Approximate Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 7.10E-04 | Mean in Log Scale | -9.309 |
| SD in Original Scale | 0.00169 | SD in Log Scale | 2.001 |
| 95% t UCL (assumes normality of ROS data) | 0.00126 | 95% Percentile Bootstrap UCL | 0.00128 |
| 95% BCA Bootstrap UCL | 0.00149 | 95% Bootstrap t UCL | 0.00153 |
| 95% H-UCL (Log ROS) | 0.00328 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -9.535 | 95% H-UCL (KM -Log) | 6.23E-04 |
| KM SD (logged) | 1.529 | 95% Critical H Value (KM-Log) | 3.283 |
| KM Standard Error of Mean (logged) | 0.332 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.00209 | Mean in Log Scale | -6.668 |
| SD in Original Scale | 0.00146 | SD in Log Scale | 1.387 |
| 95% t UCL (Assumes normality) | 0.00257 | 95% H-Stat UCL | 0.00766 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.00124 | 95% KM (Percentile Bootstrap) UCL | N/A |

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**VANADIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 27 | Number of Distinct Observations | 15 |
| Number of Detects | 13 | Number of Non-Detects | 14 |
| Number of Distinct Detects | 11 | Number of Distinct Non-Detects | 4 |
| Minimum Detect | 2.70E-04 | Minimum Non-Detect | 5.00E-04 |
| Maximum Detect | 0.0138 | Maximum Non-Detect | 0.005 |
| Variance Detects | 1.31E-05 | Percent Non-Detects | 51.85% |
| Mean Detects | 0.00232 | SD Detects | 0.00362 |
| Median Detects | 9.00E-04 | CV Detects | 1.563 |
| Skewness Detects | 3.065 | Kurtosis Detects | 10.01 |
| Mean of Logged Detects | -6.682 | SD of Logged Detects | 1.03 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.553 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.866 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.292 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.246 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.00142 | Standard Error of Mean | 5.20E-04 |
| SD | 0.00258 | 95% KM (BCA) UCL | 0.00246 |
| 95% KM (t) UCL | 0.00231 | 95% KM (Percentile Bootstrap) UCL | 0.00235 |
| 95% KM (z) UCL | 0.00228 | 95% KM Bootstrap t UCL | 0.00404 |
| 90% KM Chebyshev UCL | 0.00298 | 95% KM Chebyshev UCL | 0.00369 |
| 97.5% KM Chebyshev UCL | 0.00467 | 99% KM Chebyshev UCL | 0.0066 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.066 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.76 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.282 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.244 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.944 | k star (bias corrected MLE) | 0.777 |
| Theta hat (MLE) | 0.00246 | Theta star (bias corrected MLE) | 0.00298 |
| nu hat (MLE) | 24.54 | nu star (bias corrected) | 20.21 |
| MLE Mean (bias corrected) | 0.00232 | MLE Sd (bias corrected) | 0.00263 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.303 | nu hat (KM) | 16.37 |
| Approximate Chi Square Value (16.37, α) | 8.223 | Adjusted Chi Square Value (16.37, β) | 7.854 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.00283 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.00296 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 2.70E-04 | Mean | 0.0063 |
| Maximum | 0.0138 | Median | 0.01 |
| SD | 0.00462 | CV | 0.733 |
| k hat (MLE) | 1.064 | k star (bias corrected MLE) | 0.971 |
| Theta hat (MLE) | 0.00592 | Theta star (bias corrected MLE) | 0.00649 |
| nu hat (MLE) | 57.48 | nu star (bias corrected) | 52.43 |
| MLE Mean (bias corrected) | 0.0063 | MLE Sd (bias corrected) | 0.0064 |
| | | Adjusted Level of Significance (β) | 0.0401 |
| Approximate Chi Square Value (52.43, α) | 36.79 | Adjusted Chi Square Value (52.43, β) | 35.96 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.00898 | 95% Gamma Adjusted UCL (use when n<50) | 0.00919 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.915 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.866 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.241 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.246 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.00142 | Mean in Log Scale | -7.182 |
| SD in Original Scale | 0.00263 | SD in Log Scale | 0.985 |
| 95% t UCL (assumes normality of ROS data) | 0.00228 | 95% Percentile Bootstrap UCL | 0.00235 |
| 95% BCA Bootstrap UCL | 0.00301 | 95% Bootstrap t UCL | 0.00421 |
| 95% H-UCL (Log ROS) | 0.002 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -7.153 | 95% H-UCL (KM -Log) | 0.00182 |
| KM SD (logged) | 0.911 | 95% Critical H Value (KM-Log) | 2.407 |
| KM Standard Error of Mean (logged) | 0.207 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.00146 | Mean in Log Scale | -7.09 |
| SD in Original Scale | 0.00263 | SD in Log Scale | 0.888 |
| 95% t UCL (Assumes normality) | 0.00233 | 95% H-Stat UCL | 0.00187 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Lognormal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (BCA) UCL | 0.00246 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**BENZO(A)PYRENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 27 | Number of Distinct Observations | 6 |
| Number of Detects | 1 | Number of Non-Detects | 26 |
| Number of Distinct Detects | 1 | Number of Distinct Non-Detects | 5 |

**Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!**

**It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).**

**The data set for variable BENZO(A)PYRENE was not processed!**

| Analyte | Exp Area | Matrix | Valid Obs | Rec. UCL | Method | Max | EPC=Max |
|---|---|---|---|---|---|---|---|
| ALUMINUM | HC | Surface water | 26 | 6.153 | 99% KM (Chebyshev) UCL | 13.8 | FALSE |
| ANTIMONY | HC | Surface water | 26 | 0.00335 | 95% KM (t) UCL | 0.004 | FALSE |
| ARSENIC | HC | Surface water | 26 | 0.108 | 97.5% KM (Chebyshev) UCL | 0.329 | FALSE |
| BARIUM | HC | Surface water | 26 | 0.454 | 95% Chebyshev (Mean, Sd) UCL | 1.47 | FALSE |
| CADMIUM | HC | Surface water | 26 | 0.00249 | 95% KM (t) UCL | 0.0199 | FALSE |
| CHROMIUM | HC | Surface water | 26 | 0.117 | 99% KM (Chebyshev) UCL | 0.259 | FALSE |
| COBALT | HC | Surface water | 26 | 0.00273 | 95% KM (t) UCL | 0.0166 | FALSE |
| COPPER | HC | Surface water | 26 | 0.0282 | 95% KM (BCA) UCL | 0.186 | FALSE |
| CYANIDE | HC | Surface water | 26 | 0.00859 | 95% KM (t) UCL | 0.0248 | FALSE |
| IRON | HC | Surface water | 26 | 13.65 | 95% Chebyshev (Mean, Sd) UCL | 57.1 | FALSE |
| LEAD | HC | Surface water | 26 | 0.912 | 95% Chebyshev (Mean, Sd) UCL | 3.99 | FALSE |
| MANGANESE | HC | Surface water | 26 | 0.163 | 95% Adjusted Gamma UCL | 0.955 | FALSE |
| MERCURY | HC | Surface water | 26 | 2.02E-04 | 95% KM (t) UCL | 9.90E-04 | FALSE |
| THALLIUM | HC | Surface water | 26 | NA | NA | 0.0054 | TRUE |
| VANADIUM | HC | Surface water | 26 | 0.0051 | 95% KM (BCA) UCL | 0.0323 | FALSE |
| ZINC | HC | Surface water | 26 | 0.478 | 95% Chebyshev (Mean, Sd) UCL | 2.2 | FALSE |

SW_HC_7.10.17.xlsx

**UCL Statistics for Data Sets with Non-Detects**

| | |
|---|---|
| User Selected Options | |
| Date/Time of Computation | 7/10/2017 11:15:54 AM |
| From File | SW_HC_7.10.17.xlsx |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Number of Bootstrap Operations | 2000 |

**ALUMINUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 26 | Number of Distinct Observations | 25 |
| Number of Detects | 23 | Number of Non-Detects | 3 |
| Number of Distinct Detects | 23 | Number of Distinct Non-Detects | 2 |
| Minimum Detect | 0.0196 | Minimum Non-Detect | 0.0185 |
| Maximum Detect | 13.8 | Maximum Non-Detect | 0.0557 |
| Variance Detects | 8.057 | Percent Non-Detects | 11.54% |
| Mean Detects | 1.021 | SD Detects | 2.838 |
| Median Detects | 0.13 | CV Detects | 2.781 |
| Skewness Detects | 4.52 | Kurtosis Detects | 21.1 |
| Mean of Logged Detects | -1.426 | SD of Logged Detects | 1.562 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.353 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.914 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.362 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.185 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.905 | Standard Error of Mean | 0.527 |
| SD | 2.63 | 95% KM (BCA) UCL | 1.99 |
| 95% KM (t) UCL | 1.806 | 95% KM (Percentile Bootstrap) UCL | 1.941 |
| 95% KM (z) UCL | 1.773 | 95% KM Bootstrap t UCL | 4.971 |
| 90% KM Chebyshev UCL | 2.488 | 95% KM Chebyshev UCL | 3.204 |
| 97.5% KM Chebyshev UCL | 4.199 | 99% KM Chebyshev UCL | 6.153 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.94 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.817 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.256 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.193 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.447 | k star (bias corrected MLE) | 0.418 |
| Theta hat (MLE) | 2.283 | Theta star (bias corrected MLE) | 2.443 |

| | | | |
|---|---|---|---|
| nu hat (MLE) | 20.56 | nu star (bias corrected) | 19.21 |
| MLE Mean (bias corrected) | 1.021 | MLE Sd (bias corrected) | 1.579 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.118 | nu hat (KM) | 6.158 |
| Approximate Chi Square Value (6.16, α) | 1.721 | Adjusted Chi Square Value (6.16, β) | 1.571 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 3.239 | 95% Gamma Adjusted KM-UCL (use when n<50) | 3.547 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 0.904 |
| Maximum | 13.8 | Median | 0.125 |
| SD | 2.683 | CV | 2.968 |
| k hat (MLE) | 0.39 | k star (bias corrected MLE) | 0.371 |
| Theta hat (MLE) | 2.315 | Theta star (bias corrected MLE) | 2.436 |
| nu hat (MLE) | 20.31 | nu star (bias corrected) | 19.3 |
| MLE Mean (bias corrected) | 0.904 | MLE Sd (bias corrected) | 1.484 |
| | | Adjusted Level of Significance (β) | 0.0398 |
| Approximate Chi Square Value (19.30, α) | 10.33 | Adjusted Chi Square Value (19.30, β) | 9.901 |
| 95% Gamma Approximate UCL (use when n>=50) | 1.688 | 95% Gamma Adjusted UCL (use when n<50) | 1.762 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.934 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.914 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.216 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.185 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data appear Approximate Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.904 | Mean in Log Scale | -1.81 |
| SD in Original Scale | 2.683 | SD in Log Scale | 1.833 |
| 95% t UCL (assumes normality of ROS data) | 1.803 | 95% Percentile Bootstrap UCL | 1.953 |
| 95% BCA Bootstrap UCL | 2.503 | 95% Bootstrap t UCL | 4.797 |
| 95% H-UCL (Log ROS) | 3.451 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -1.712 | 95% H-UCL (KM -Log) | 2.15 |
| KM SD (logged) | 1.643 | 95% Critical H Value (KM-Log) | 3.436 |
| KM Standard Error of Mean (logged) | 0.33 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.905 | Mean in Log Scale | -1.759 |
| SD in Original Scale | 2.683 | SD in Log Scale | 1.751 |
| 95% t UCL (Assumes normality) | 1.803 | 95% H-Stat UCL | 2.818 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 99% KM (Chebyshev) UCL | 6.153 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**ANTIMONY**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 26 | Number of Distinct Observations | 4 |
| Number of Detects | 4 | Number of Non-Detects | 22 |
| Number of Distinct Detects | 2 | Number of Distinct Non-Detects | 2 |
| Minimum Detect | 0.0038 | Minimum Non-Detect | 0.0027 |
| Maximum Detect | 0.004 | Maximum Non-Detect | 0.0047 |
| Variance Detects | 1.00E-08 | Percent Non-Detects | 84.62% |
| Mean Detects | 0.00385 | SD Detects | 1.00E-04 |
| Median Detects | 0.0038 | CV Detects | 0.026 |
| Skewness Detects | 2 | Kurtosis Detects | 4 |
| Mean of Logged Detects | -5.56 | SD of Logged Detects | 0.0256 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.63 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.748 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.441 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.443 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Approximate Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.00305 | Standard Error of Mean | 1.71E-04 |
| SD | 5.33E-04 | 95% KM (BCA) UCL | N/A |
| 95% KM (t) UCL | 0.00335 | 95% KM (Percentile Bootstrap) UCL | N/A |
| 95% KM (z) UCL | 0.00333 | 95% KM Bootstrap t UCL | N/A |
| 90% KM Chebyshev UCL | 0.00357 | 95% KM Chebyshev UCL | 0.0038 |
| 97.5% KM Chebyshev UCL | 0.00412 | 99% KM Chebyshev UCL | 0.00475 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.967 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.657 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.471 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.394 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 2010 | k star (bias corrected MLE) | 502.7 |
| Theta hat (MLE) | 1.92E-06 | Theta star (bias corrected MLE) | 7.66E-06 |
| nu hat (MLE) | 16081 | nu star (bias corrected) | 4022 |
| MLE Mean (bias corrected) | 0.00385 | MLE Sd (bias corrected) | 1.72E-04 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 32.84 | nu hat (KM) | 1707 |
| Approximate Chi Square Value (N/A, α) | 1612 | Adjusted Chi Square Value (N/A, β) | 1606 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.00323 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.00325 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.0038 | Mean | 0.00905 |
| Maximum | 0.01 | Median | 0.01 |
| SD | 0.00226 | CV | 0.25 |
| k hat (MLE) | 10.69 | k star (bias corrected MLE) | 9.484 |
| Theta hat (MLE) | 8.47E-04 | Theta star (bias corrected MLE) | 9.55E-04 |
| nu hat (MLE) | 556 | nu star (bias corrected) | 493.2 |
| MLE Mean (bias corrected) | 0.00905 | MLE Sd (bias corrected) | 0.00294 |
| | | Adjusted Level of Significance (β) | 0.0398 |
| Approximate Chi Square Value (493.18, α) | 442.7 | Adjusted Chi Square Value (493.18, β) | 439.5 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0101 | 95% Gamma Adjusted UCL (use when n<50) | N/A |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.63 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.748 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.441 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.443 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Approximate Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.00362 | Mean in Log Scale | -5.623 |
| SD in Original Scale | 1.86E-04 | SD in Log Scale | 0.0512 |
| 95% t UCL (assumes normality of ROS data) | 0.00368 | 95% Percentile Bootstrap UCL | 0.00368 |
| 95% BCA Bootstrap UCL | 0.00368 | 95% Bootstrap t UCL | 0.00368 |
| 95% H-UCL (Log ROS) | N/A | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -5.805 | 95% H-UCL (KM -Log) | 0.00323 |
| KM SD (logged) | 0.164 | 95% Critical H Value (KM-Log) | 1.74 |
| KM Standard Error of Mean (logged) | 0.0526 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.00223 | Mean in Log Scale | -6.169 |

| | | | |
|---|---|---|---|
| SD in Original Scale | 8.41E-04 | SD in Log Scale | 0.368 |
| 95% t UCL (Assumes normality) | 0.00252 | 95% H-Stat UCL | 0.00257 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.00335 | 95% KM (Percentile Bootstrap) UCL | N/A |

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**ARSENIC**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 26 | Number of Distinct Observations | 22 |
| Number of Detects | 21 | Number of Non-Detects | 5 |
| Number of Distinct Detects | 20 | Number of Distinct Non-Detects | 2 |
| Minimum Detect | 0.0063 | Minimum Non-Detect | 0.0045 |
| Maximum Detect | 0.329 | Maximum Non-Detect | 0.0048 |
| Variance Detects | 0.0048 | Percent Non-Detects | 19.23% |
| Mean Detects | 0.0368 | SD Detects | 0.0693 |
| Median Detects | 0.0104 | CV Detects | 1.885 |
| Skewness Detects | 4.111 | Kurtosis Detects | 17.9 |
| Mean of Logged Detects | -3.973 | SD of Logged Detects | 1.01 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.429 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.908 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.352 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.193 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.0306 | Standard Error of Mean | 0.0125 |
| SD | 0.0621 | 95% KM (BCA) UCL | 0.0549 |
| 95% KM (t) UCL | 0.0519 | 95% KM (Percentile Bootstrap) UCL | 0.0545 |
| 95% KM (z) UCL | 0.0511 | 95% KM Bootstrap t UCL | 0.102 |
| 90% KM Chebyshev UCL | 0.068 | 95% KM Chebyshev UCL | 0.0849 |
| 97.5% KM Chebyshev UCL | 0.108 | 99% KM Chebyshev UCL | 0.155 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.844 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.776 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.248 | **Kolmogrov-Smirnoff GOF** | |

| | | | |
|---|---|---|---|
| 5% K-S Critical Value | 0.196 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.876 | k star (bias corrected MLE) | 0.783 |
| Theta hat (MLE) | 0.042 | Theta star (bias corrected MLE) | 0.047 |
| nu hat (MLE) | 36.8 | nu star (bias corrected) | 32.88 |
| MLE Mean (bias corrected) | 0.0368 | MLE Sd (bias corrected) | 0.0415 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.242 | nu hat (KM) | 12.6 |
| Approximate Chi Square Value (12.60, α) | 5.623 | Adjusted Chi Square Value (12.60, β) | 5.317 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.0685 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.0724 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.0063 | Mean | 0.0316 |
| Maximum | 0.329 | Median | 0.01 |
| SD | 0.0629 | CV | 1.989 |
| k hat (MLE) | 0.912 | k star (bias corrected MLE) | 0.832 |
| Theta hat (MLE) | 0.0347 | Theta star (bias corrected MLE) | 0.038 |
| nu hat (MLE) | 47.41 | nu star (bias corrected) | 43.27 |
| MLE Mean (bias corrected) | 0.0316 | MLE Sd (bias corrected) | 0.0347 |
| | | Adjusted Level of Significance (β) | 0.0398 |
| Approximate Chi Square Value (43.27, α) | 29.19 | Adjusted Chi Square Value (43.27, β) | 28.42 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0469 | 95% Gamma Adjusted UCL (use when n<50) | 0.0481 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.849 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.908 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.245 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.193 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.0301 | Mean in Log Scale | -4.406 |
| SD in Original Scale | 0.0635 | SD in Log Scale | 1.287 |
| 95% t UCL (assumes normality of ROS data) | 0.0514 | 95% Percentile Bootstrap UCL | 0.0534 |
| 95% BCA Bootstrap UCL | 0.072 | 95% Bootstrap t UCL | 0.096 |
| 95% H-UCL (Log ROS) | 0.0589 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.0301 | Mean in Log Scale | -4.374 |
| SD in Original Scale | 0.0635 | SD in Log Scale | 1.233 |

| | | | |
|---|---|---|---|
| 95% t UCL (Assumes normality) | 0.0514 | 95% H-Stat UCL | 0.054 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 97.5% KM (Chebyshev) UCL | 0.108 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**BARIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 26 | Number of Distinct Observations | 25 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.0749 | Mean | 0.224 |
| Maximum | 1.47 | Median | 0.142 |
| SD | 0.268 | Std. Error of Mean | 0.0526 |
| Coefficient of Variation | 1.196 | Skewness | 4.322 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.446 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.92 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.369 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.174 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
|---|---|---|---|
| 95% Student's-t UCL | 0.314 | 95% Adjusted-CLT UCL (Chen-1995) | 0.359 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.322 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.624 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.757 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.293 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.173 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 2.068 | k star (bias corrected MLE) | 1.855 |
| Theta hat (MLE) | 0.109 | Theta star (bias corrected MLE) | 0.121 |
| nu hat (MLE) | 107.5 | nu star (bias corrected) | 96.47 |
| MLE Mean (bias corrected) | 0.224 | MLE Sd (bias corrected) | 0.165 |

| | | | |
|---|---|---|---|
| | | Approximate Chi Square Value (0.05) | 74.82 |
| Adjusted Level of Significance | 0.0398 | Adjusted Chi Square Value | 73.56 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 0.289 | 95% Adjusted Gamma UCL (use when n<50) | 0.294 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.819 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.92 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.223 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.174 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -2.592 | Mean of logged Data | -1.755 |
| Maximum of Logged Data | 0.385 | SD of logged Data | 0.603 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.266 | 90% Chebyshev (MVUE) UCL | 0.283 |
| 95% Chebyshev (MVUE) UCL | 0.318 | 97.5% Chebyshev (MVUE) UCL | 0.367 |
| 99% Chebyshev (MVUE) UCL | 0.462 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.311 | 95% Jackknife UCL | 0.314 |
| 95% Standard Bootstrap UCL | 0.311 | 95% Bootstrap-t UCL | 0.505 |
| 95% Hall's Bootstrap UCL | 0.601 | 95% Percentile Bootstrap UCL | 0.324 |
| 95% BCA Bootstrap UCL | 0.377 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.382 | 95% Chebyshev(Mean, Sd) UCL | 0.454 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.553 | 99% Chebyshev(Mean, Sd) UCL | 0.748 |

**Suggested UCL to Use**

95% Chebyshev (Mean, Sd) UCL 0.454

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**CADMIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 26 | Number of Distinct Observations | 6 |
| Number of Detects | 4 | Number of Non-Detects | 22 |
| Number of Distinct Detects | 4 | Number of Distinct Non-Detects | 2 |
| Minimum Detect | 4.20E-04 | Minimum Non-Detect | 2.00E-04 |
| Maximum Detect | 0.0199 | Maximum Non-Detect | 8.30E-04 |

| | | | |
|---|---|---|---|
| Variance Detects | 9.24E-05 | Percent Non-Detects | 84.62% |
| Mean Detects | 0.00549 | SD Detects | 0.00961 |
| Median Detects | 8.20E-04 | CV Detects | 1.751 |
| Skewness Detects | 1.992 | Kurtosis Detects | 3.971 |
| Mean of Logged Detects | -6.537 | SD of Logged Detects | 1.812 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.659 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.748 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.422 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.443 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Approximate Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.00103 | Standard Error of Mean | 8.56E-04 |
| SD | 0.00378 | 95% KM (BCA) UCL | N/A |
| 95% KM (t) UCL | 0.00249 | 95% KM (Percentile Bootstrap) UCL | N/A |
| 95% KM (z) UCL | 0.00244 | 95% KM Bootstrap t UCL | N/A |
| 90% KM Chebyshev UCL | 0.0036 | 95% KM Chebyshev UCL | 0.00476 |
| 97.5% KM Chebyshev UCL | 0.00638 | 99% KM Chebyshev UCL | 0.00955 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.651 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.683 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.38 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.411 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.48 | k star (bias corrected MLE) | 0.287 |
| Theta hat (MLE) | 0.0114 | Theta star (bias corrected MLE) | 0.0192 |
| nu hat (MLE) | 3.84 | nu star (bias corrected) | 2.293 |
| MLE Mean (bias corrected) | 0.00549 | MLE Sd (bias corrected) | 0.0103 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.0745 | nu hat (KM) | 3.874 |
| Approximate Chi Square Value (3.87, α) | 0.673 | Adjusted Chi Square Value (3.87, β) | 0.594 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.00594 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.00673 |

Gamma (KM) may not be used when k hat (KM) is < 0.1

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 4.20E-04 | Mean | 0.00931 |
| Maximum | 0.0199 | Median | 0.01 |
| SD | 0.00372 | CV | 0.4 |
| k hat (MLE) | 2.373 | k star (bias corrected MLE) | 2.125 |

| | | | |
|---|---|---|---|
| Theta hat (MLE) | 0.00392 | Theta star (bias corrected MLE) | 0.00438 |
| nu hat (MLE) | 123.4 | nu star (bias corrected) | 110.5 |
| MLE Mean (bias corrected) | 0.00931 | MLE Sd (bias corrected) | 0.00638 |
| | | Adjusted Level of Significance (β) | 0.0398 |
| Approximate Chi Square Value (110.50, α) | 87.24 | Adjusted Chi Square Value (110.50, β) | 85.87 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0118 | 95% Gamma Adjusted UCL (use when n<50) | N/A |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.807 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.748 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.291 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.443 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 8.77E-04 | Mean in Log Scale | -11.41 |
| SD in Original Scale | 0.00389 | SD in Log Scale | 3.155 |
| 95% t UCL (assumes normality of ROS data) | 0.00218 | 95% Percentile Bootstrap UCL | 0.0024 |
| 95% BCA Bootstrap UCL | 0.0032 | 95% Bootstrap t UCL | 0.0276 |
| 95% H-UCL (Log ROS) | 0.0697 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -8.154 | 95% H-UCL (KM -Log) | 7.14E-04 |
| KM SD (logged) | 0.946 | 95% Critical H Value (KM-Log) | 2.439 |
| KM Standard Error of Mean (logged) | 0.223 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.00107 | Mean in Log Scale | -8.142 |
| SD in Original Scale | 0.00385 | SD in Log Scale | 1.15 |
| 95% t UCL (Assumes normality) | 0.00236 | 95% H-Stat UCL | 0.00105 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.00249 | 95% KM (Percentile Bootstrap) UCL | N/A |

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHROMIUM

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 26 | Number of Distinct Observations | 17 |
| Number of Detects | 15 | Number of Non-Detects | 11 |
| Number of Distinct Detects | 15 | Number of Distinct Non-Detects | 2 |
| Minimum Detect | 8.50E-04 | Minimum Non-Detect | 8.00E-04 |
| Maximum Detect | 0.259 | Maximum Non-Detect | 0.002 |
| Variance Detects | 0.00439 | Percent Non-Detects | 42.31% |
| Mean Detects | 0.0265 | SD Detects | 0.0663 |
| Median Detects | 0.0043 | CV Detects | 2.503 |
| Skewness Detects | 3.535 | Kurtosis Detects | 12.93 |
| Mean of Logged Detects | -5.109 | SD of Logged Detects | 1.518 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.427 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.881 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.379 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.229 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.0156 | Standard Error of Mean | 0.0102 |
| SD | 0.0502 | 95% KM (BCA) UCL | 0.0359 |
| 95% KM (t) UCL | 0.0331 | 95% KM (Percentile Bootstrap) UCL | 0.035 |
| 95% KM (z) UCL | 0.0324 | 95% KM Bootstrap t UCL | 0.154 |
| 90% KM Chebyshev UCL | 0.0462 | 95% KM Chebyshev UCL | 0.0601 |
| 97.5% KM Chebyshev UCL | 0.0793 | 99% KM Chebyshev UCL | 0.117 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.876 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.806 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.352 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.236 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.439 | k star (bias corrected MLE) | 0.396 |
| Theta hat (MLE) | 0.0603 | Theta star (bias corrected MLE) | 0.0669 |
| nu hat (MLE) | 13.17 | nu star (bias corrected) | 11.87 |
| MLE Mean (bias corrected) | 0.0265 | MLE Sd (bias corrected) | 0.0421 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.0969 | nu hat (KM) | 5.041 |
| Approximate Chi Square Value (5.04, α) | 1.171 | Adjusted Chi Square Value (5.04, β) | 1.055 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.0673 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.0748 |

Gamma (KM) may not be used when k hat (KM) is < 0.1

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 8.50E-04 | Mean | 0.0195 |
| Maximum | 0.259 | Median | 0.01 |
| SD | 0.0503 | CV | 2.577 |
| k hat (MLE) | 0.639 | k star (bias corrected MLE) | 0.591 |
| Theta hat (MLE) | 0.0305 | Theta star (bias corrected MLE) | 0.033 |
| nu hat (MLE) | 33.21 | nu star (bias corrected) | 30.72 |
| MLE Mean (bias corrected) | 0.0195 | MLE Sd (bias corrected) | 0.0254 |
| | | Adjusted Level of Significance (β) | 0.0398 |
| Approximate Chi Square Value (30.72, α) | 19.06 | Adjusted Chi Square Value (30.72, β) | 18.45 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0314 | 95% Gamma Adjusted UCL (use when n<50) | 0.0325 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.877 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.881 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.263 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.229 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.0154 | Mean in Log Scale | -6.645 |
| SD in Original Scale | 0.0513 | SD in Log Scale | 2.265 |
| 95% t UCL (assumes normality of ROS data) | 0.0326 | 95% Percentile Bootstrap UCL | 0.0346 |
| 95% BCA Bootstrap UCL | 0.0468 | 95% Bootstrap t UCL | 0.139 |
| 95% H-UCL (Log ROS) | 0.127 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.0156 | Mean in Log Scale | -6.011 |
| SD in Original Scale | 0.0512 | SD in Log Scale | 1.591 |
| 95% t UCL (Assumes normality) | 0.0328 | 95% H-Stat UCL | 0.0253 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 99% KM (Chebyshev) UCL | 0.117 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COBALT

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 26 | Number of Distinct Observations | 8 |
| Number of Detects | 7 | Number of Non-Detects | 19 |
| Number of Distinct Detects | 6 | Number of Distinct Non-Detects | 2 |
| Minimum Detect | 9.90E-04 | Minimum Non-Detect | 9.00E-04 |
| Maximum Detect | 0.0166 | Maximum Non-Detect | 0.0014 |
| Variance Detects | 3.30E-05 | Percent Non-Detects | 73.08% |
| Mean Detects | 0.0036 | SD Detects | 0.00575 |
| Median Detects | 0.0016 | CV Detects | 1.597 |
| Skewness Detects | 2.621 | Kurtosis Detects | 6.898 |
| Mean of Logged Detects | -6.23 | SD of Logged Detects | 0.979 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.515 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.803 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.467 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.335 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.00165 | Standard Error of Mean | 6.37E-04 |
| SD | 0.003 | 95% KM (BCA) UCL | 0.00287 |
| 95% KM (t) UCL | 0.00273 | 95% KM (Percentile Bootstrap) UCL | 0.00285 |
| 95% KM (z) UCL | 0.00269 | 95% KM Bootstrap t UCL | 0.00972 |
| 90% KM Chebyshev UCL | 0.00356 | 95% KM Chebyshev UCL | 0.00442 |
| 97.5% KM Chebyshev UCL | 0.00562 | 99% KM Chebyshev UCL | 0.00798 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.351 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.729 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.424 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.32 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.961 | k star (bias corrected MLE) | 0.645 |
| Theta hat (MLE) | 0.00374 | Theta star (bias corrected MLE) | 0.00558 |
| nu hat (MLE) | 13.46 | nu star (bias corrected) | 9.024 |
| MLE Mean (bias corrected) | 0.0036 | MLE Sd (bias corrected) | 0.00448 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.3 | nu hat (KM) | 15.59 |
| Approximate Chi Square Value (15.59, α) | 7.676 | Adjusted Chi Square Value (15.59, β) | 7.31 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.00334 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.00351 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 9.90E-04 | Mean | 0.00828 |
| Maximum | 0.0166 | Median | 0.01 |
| SD | 0.00404 | CV | 0.488 |
| k hat (MLE) | 2.165 | k star (bias corrected MLE) | 1.941 |
| Theta hat (MLE) | 0.00382 | Theta star (bias corrected MLE) | 0.00427 |
| nu hat (MLE) | 112.6 | nu star (bias corrected) | 100.9 |
| MLE Mean (bias corrected) | 0.00828 | MLE Sd (bias corrected) | 0.00594 |
| | | Adjusted Level of Significance (β) | 0.0398 |
| Approximate Chi Square Value (100.91, α) | 78.73 | Adjusted Chi Square Value (100.91, β) | 77.44 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0106 | 95% Gamma Adjusted UCL (use when n<50) | 0.0108 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.701 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.803 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.351 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.335 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.00118 | Mean in Log Scale | -7.958 |
| SD in Original Scale | 0.0032 | SD in Log Scale | 1.454 |
| 95% t UCL (assumes normality of ROS data) | 0.00225 | 95% Percentile Bootstrap UCL | 0.0024 |
| 95% BCA Bootstrap UCL | 0.00321 | 95% Bootstrap t UCL | 0.00616 |
| 95% H-UCL (Log ROS) | 0.00251 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.0014 | Mean in Log Scale | -7.122 |
| SD in Original Scale | 0.00313 | SD in Log Scale | 0.755 |
| 95% t UCL (Assumes normality) | 0.00245 | 95% H-Stat UCL | 0.0015 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.00273 | 95% KM (% Bootstrap) UCL | 0.00285 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**COPPER**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 26 | Number of Distinct Observations | 17 |
| Number of Detects | 18 | Number of Non-Detects | 8 |
| Number of Distinct Detects | 16 | Number of Distinct Non-Detects | 2 |
| Minimum Detect | 0.0038 | Minimum Non-Detect | 0.0034 |
| Maximum Detect | 0.186 | Maximum Non-Detect | 0.005 |
| Variance Detects | 0.00178 | Percent Non-Detects | 30.77% |
| Mean Detects | 0.0184 | SD Detects | 0.0422 |
| Median Detects | 0.0061 | CV Detects | 2.289 |
| Skewness Detects | 4.115 | Kurtosis Detects | 17.2 |
| Mean of Logged Detects | -4.73 | SD of Logged Detects | 0.915 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.348 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.897 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.428 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.209 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.0139 | Standard Error of Mean | 0.00703 |
| SD | 0.0348 | 95% KM (BCA) UCL | 0.0282 |
| 95% KM (t) UCL | 0.0259 | 95% KM (Percentile Bootstrap) UCL | 0.0274 |
| 95% KM (z) UCL | 0.0254 | 95% KM Bootstrap t UCL | 0.106 |
| 90% KM Chebyshev UCL | 0.0349 | 95% KM Chebyshev UCL | 0.0445 |
| 97.5% KM Chebyshev UCL | 0.0577 | 99% KM Chebyshev UCL | 0.0838 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 3.028 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.775 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.324 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.211 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.804 | k star (bias corrected MLE) | 0.707 |
| Theta hat (MLE) | 0.0229 | Theta star (bias corrected MLE) | 0.0261 |
| nu hat (MLE) | 28.96 | nu star (bias corrected) | 25.46 |
| MLE Mean (bias corrected) | 0.0184 | MLE Sd (bias corrected) | 0.0219 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.158 | nu hat (KM) | 8.227 |
| Approximate Chi Square Value (8.23, α) | 2.867 | Adjusted Chi Square Value (8.23, β) | 2.662 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.0397 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.0428 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.0038 | Mean | 0.0158 |
| Maximum | 0.186 | Median | 0.01 |
| SD | 0.035 | CV | 2.211 |
| k hat (MLE) | 1.049 | k star (bias corrected MLE) | 0.954 |
| Theta hat (MLE) | 0.0151 | Theta star (bias corrected MLE) | 0.0166 |
| nu hat (MLE) | 54.57 | nu star (bias corrected) | 49.6 |
| MLE Mean (bias corrected) | 0.0158 | MLE Sd (bias corrected) | 0.0162 |
| | | Adjusted Level of Significance (β) | 0.0398 |
| Approximate Chi Square Value (49.60, α) | 34.43 | Adjusted Chi Square Value (49.60, β) | 33.6 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0228 | 95% Gamma Adjusted UCL (use when n<50) | 0.0234 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.733 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.897 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.242 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.209 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.0132 | Mean in Log Scale | -5.308 |
| SD in Original Scale | 0.0357 | SD in Log Scale | 1.189 |
| 95% t UCL (assumes normality of ROS data) | 0.0252 | 95% Percentile Bootstrap UCL | 0.0269 |
| 95% BCA Bootstrap UCL | 0.036 | 95% Bootstrap t UCL | 0.0921 |
| 95% H-UCL (Log ROS) | 0.0194 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.0134 | Mean in Log Scale | -5.193 |
| SD in Original Scale | 0.0357 | SD in Log Scale | 1.04 |
| 95% t UCL (Assumes normality) | 0.0253 | 95% H-Stat UCL | 0.0162 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (BCA) UCL | 0.0282 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**CYANIDE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 26 | Number of Distinct Observations | 11 |
| Number of Detects | 9 | Number of Non-Detects | 17 |
| Number of Distinct Detects | 9 | Number of Distinct Non-Detects | 2 |

| | | | |
|---|---|---|---|
| Minimum Detect | 0.0064 | Minimum Non-Detect | 8.60E-04 |
| Maximum Detect | 0.0248 | Maximum Non-Detect | 0.0011 |
| Variance Detects | 5.14E-05 | Percent Non-Detects | 65.38% |
| Mean Detects | 0.0151 | SD Detects | 0.00717 |
| Median Detects | 0.0176 | CV Detects | 0.474 |
| Skewness Detects | -0.0152 | Kurtosis Detects | -1.824 |
| Mean of Logged Detects | -4.31 | SD of Logged Detects | 0.537 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.898 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.829 | Detected Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.194 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.295 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.0058 | Standard Error of Mean | 0.00164 |
| SD | 0.00786 | 95% KM (BCA) UCL | 0.00841 |
| 95% KM (t) UCL | 0.00859 | 95% KM (Percentile Bootstrap) UCL | 0.00841 |
| 95% KM (z) UCL | 0.00849 | 95% KM Bootstrap t UCL | 0.00897 |
| 90% KM Chebyshev UCL | 0.0107 | 95% KM Chebyshev UCL | 0.0129 |
| 97.5% KM Chebyshev UCL | 0.016 | 99% KM Chebyshev UCL | 0.0221 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.504 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.724 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.241 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.28 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 4.389 | k star (bias corrected MLE) | 3 |
| Theta hat (MLE) | 0.00345 | Theta star (bias corrected MLE) | 0.00504 |
| nu hat (MLE) | 78.99 | nu star (bias corrected) | 54 |
| MLE Mean (bias corrected) | 0.0151 | MLE Sd (bias corrected) | 0.00873 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.543 | nu hat (KM) | 28.25 |
| Approximate Chi Square Value (28.25, α) | 17.12 | Adjusted Chi Square Value (28.25, β) | 16.55 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.00956 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.00989 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.0064 | Mean | 0.0118 |
| Maximum | 0.0248 | Median | 0.01 |
| SD | 0.00476 | CV | 0.404 |

| | | | |
|---|---|---|---|
| k hat (MLE) | 8.36 | k star (bias corrected MLE) | 7.421 |
| Theta hat (MLE) | 0.00141 | Theta star (bias corrected MLE) | 0.00159 |
| nu hat (MLE) | 434.7 | nu star (bias corrected) | 385.9 |
| MLE Mean (bias corrected) | 0.0118 | MLE Sd (bias corrected) | 0.00432 |
| | | Adjusted Level of Significance (β) | 0.0398 |
| Approximate Chi Square Value (385.91, α) | 341.4 | Adjusted Chi Square Value (385.91, β) | 338.6 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0133 | 95% Gamma Adjusted UCL (use when n<50) | 0.0134 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.877 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.829 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.248 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.295 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.00705 | Mean in Log Scale | -5.449 |
| SD in Original Scale | 0.00734 | SD in Log Scale | 1.028 |
| 95% t UCL (assumes normality of ROS data) | 0.00951 | 95% Percentile Bootstrap UCL | 0.00949 |
| 95% BCA Bootstrap UCL | 0.00979 | 95% Bootstrap t UCL | 0.0102 |
| 95% H-UCL (Log ROS) | 0.0123 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -6.107 | 95% H-UCL (KM -Log) | 0.0122 |
| KM SD (logged) | 1.341 | 95% Critical H Value (KM-Log) | 2.978 |
| KM Standard Error of Mean (logged) | 0.279 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.00554 | Mean in Log Scale | -6.513 |
| SD in Original Scale | 0.00819 | SD in Log Scale | 1.665 |
| 95% t UCL (Assumes normality) | 0.00828 | 95% H-Stat UCL | 0.0189 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.00859 | 95% KM (Percentile Bootstrap) UCL | 0.00841 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

IRON

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 26 | Number of Distinct Observations | 24 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.571 | Mean | 4.347 |
| Maximum | 57.1 | Median | 1.535 |
| SD | 10.88 | Std. Error of Mean | 2.133 |
| Coefficient of Variation | 2.503 | Skewness | 4.925 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.314 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.92 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.406 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.174 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 7.991 | 95% Adjusted-CLT UCL (Chen-1995) | 10.06 |
| | | 95% Modified-t UCL (Johnson-1978) | 8.334 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.896 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.783 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.256 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.178 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.784 | k star (bias corrected MLE) | 0.72 |
| Theta hat (MLE) | 5.542 | Theta star (bias corrected MLE) | 6.041 |
| nu hat (MLE) | 40.79 | nu star (bias corrected) | 37.42 |
| MLE Mean (bias corrected) | 4.347 | MLE Sd (bias corrected) | 5.124 |
| | | Approximate Chi Square Value (0.05) | 24.41 |
| Adjusted Level of Significance | 0.0398 | Adjusted Chi Square Value | 23.72 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 6.663 | 95% Adjusted Gamma UCL (use when n<50) | 6.858 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.864 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.92 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.143 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.174 | Data appear Lognormal at 5% Significance Level | |

Data appear Approximate Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -0.56 | Mean of logged Data | 0.711 |
| Maximum of Logged Data | 4.045 | SD of logged Data | 0.953 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 5.115 | 90% Chebyshev (MVUE) UCL | 5.113 |
| 95% Chebyshev (MVUE) UCL | 6.011 | 97.5% Chebyshev (MVUE) UCL | 7.257 |
| 99% Chebyshev (MVUE) UCL | 9.706 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 7.856 | 95% Jackknife UCL | 7.991 |
| 95% Standard Bootstrap UCL | 7.849 | 95% Bootstrap-t UCL | 26.3 |
| 95% Hall's Bootstrap UCL | 22.01 | 95% Percentile Bootstrap UCL | 8.568 |
| 95% BCA Bootstrap UCL | 10.67 | | |
| 90% Chebyshev(Mean, Sd) UCL | 10.75 | 95% Chebyshev(Mean, Sd) UCL | 13.65 |
| 97.5% Chebyshev(Mean, Sd) UCL | 17.67 | 99% Chebyshev(Mean, Sd) UCL | 25.57 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 13.65 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**LEAD**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 26 | Number of Distinct Observations | 26 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.0035 | Mean | 0.236 |
| Maximum | 3.99 | Median | 0.02 |
| SD | 0.791 | Std. Error of Mean | 0.155 |
| Coefficient of Variation | 3.35 | Skewness | 4.653 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.319 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.92 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.426 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.174 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 0.501 | 95% Adjusted-CLT UCL (Chen-1995) | 0.642 |

| | | | |
|---|---|---|---|
| | | 95% Modified-t UCL (Johnson-1978) | 0.524 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 3.459 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.844 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.326 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.185 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.337 | k star (bias corrected MLE) | 0.323 |
| Theta hat (MLE) | 0.701 | Theta star (bias corrected MLE) | 0.73 |
| nu hat (MLE) | 17.5 | nu star (bias corrected) | 16.81 |
| MLE Mean (bias corrected) | 0.236 | MLE Sd (bias corrected) | 0.415 |
| | | Approximate Chi Square Value (0.05) | 8.54 |
| Adjusted Level of Significance | 0.0398 | Adjusted Chi Square Value | 8.151 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 0.465 | 95% Adjusted Gamma UCL (use when n<50) | 0.487 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.897 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.92 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.178 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.174 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -5.655 | Mean of logged Data | -3.455 |
| Maximum of Logged Data | 1.384 | SD of logged Data | 1.68 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.419 | 90% Chebyshev (MVUE) UCL | 0.26 |
| 95% Chebyshev (MVUE) UCL | 0.326 | 97.5% Chebyshev (MVUE) UCL | 0.417 |
| 99% Chebyshev (MVUE) UCL | 0.595 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.491 | 95% Jackknife UCL | 0.501 |
| 95% Standard Bootstrap UCL | 0.49 | 95% Bootstrap-t UCL | 1.885 |
| 95% Hall's Bootstrap UCL | 1.864 | 95% Percentile Bootstrap UCL | 0.528 |
| 95% BCA Bootstrap UCL | 0.741 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.701 | 95% Chebyshev(Mean, Sd) UCL | 0.912 |
| 97.5% Chebyshev(Mean, Sd) UCL | 1.204 | 99% Chebyshev(Mean, Sd) UCL | 1.779 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 0.912 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**MANGANESE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 26 | Number of Distinct Observations | 26 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.0153 | Mean | 0.113 |
| Maximum | 0.955 | Median | 0.0673 |
| SD | 0.18 | Std. Error of Mean | 0.0353 |
| Coefficient of Variation | 1.595 | Skewness | 4.401 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.453 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.92 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.294 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.174 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 0.173 | 95% Adjusted-CLT UCL (Chen-1995) | 0.204 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.178 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.373 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.769 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.154 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.176 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data follow Appr. Gamma Distribution at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.177 | k star (bias corrected MLE) | 1.067 |
| Theta hat (MLE) | 0.0959 | Theta star (bias corrected MLE) | 0.106 |
| nu hat (MLE) | 61.22 | nu star (bias corrected) | 55.49 |
| MLE Mean (bias corrected) | 0.113 | MLE Sd (bias corrected) | 0.109 |
| | | Approximate Chi Square Value (0.05) | 39.37 |
| Adjusted Level of Significance | 0.0398 | Adjusted Chi Square Value | 38.47 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50) | 0.159 | 95% Adjusted Gamma UCL (use when n<50) | 0.163 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.938 | **Shapiro Wilk Lognormal GOF Test** | |

| | | | |
|---|---|---|---|
| 5% Shapiro Wilk Critical Value | 0.92 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.132 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.174 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -4.18 | Mean of logged Data | -2.663 |
| Maximum of Logged Data | -0.046 | SD of logged Data | 0.878 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.155 | 90% Chebyshev (MVUE) UCL | 0.158 |
| 95% Chebyshev (MVUE) UCL | 0.185 | 97.5% Chebyshev (MVUE) UCL | 0.221 |
| 99% Chebyshev (MVUE) UCL | 0.292 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.171 | 95% Jackknife UCL | 0.173 |
| 95% Standard Bootstrap UCL | 0.168 | 95% Bootstrap-t UCL | 0.285 |
| 95% Hall's Bootstrap UCL | 0.389 | 95% Percentile Bootstrap UCL | 0.178 |
| 95% BCA Bootstrap UCL | 0.214 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.219 | 95% Chebyshev(Mean, Sd) UCL | 0.267 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.333 | 99% Chebyshev(Mean, Sd) UCL | 0.464 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Adjusted Gamma UCL | 0.163 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**MERCURY**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 26 | Number of Distinct Observations | 5 |
| Number of Detects | 7 | Number of Non-Detects | 19 |
| Number of Distinct Detects | 5 | Number of Distinct Non-Detects | 1 |
| Minimum Detect | 1.00E-04 | Minimum Non-Detect | 1.00E-04 |
| Maximum Detect | 9.90E-04 | Maximum Non-Detect | 1.00E-04 |
| Variance Detects | 1.07E-07 | Percent Non-Detects | 73.08% |
| Mean Detects | 2.50E-04 | SD Detects | 3.27E-04 |
| Median Detects | 1.40E-04 | CV Detects | 1.308 |
| Skewness Detects | 2.622 | Kurtosis Detects | 6.905 |
| Mean of Logged Detects | -8.692 | SD of Logged Detects | 0.8 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.514 | **Shapiro Wilk GOF Test** | |

| | | | |
|---|---|---|---|
| 5% Shapiro Wilk Critical Value | 0.803 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.466 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.335 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 1.40E-04 | Standard Error of Mean | 3.61E-05 |
| SD | 1.71E-04 | 95% KM (BCA) UCL | 2.08E-04 |
| 95% KM (t) UCL | 2.02E-04 | 95% KM (Percentile Bootstrap) UCL | 2.08E-04 |
| 95% KM (z) UCL | 2.00E-04 | 95% KM Bootstrap t UCL | 6.82E-04 |
| 90% KM Chebyshev UCL | 2.49E-04 | 95% KM Chebyshev UCL | 2.98E-04 |
| 97.5% KM Chebyshev UCL | 3.66E-04 | 99% KM Chebyshev UCL | 5.00E-04 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.486 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.723 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.436 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.318 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.399 | k star (bias corrected MLE) | 0.894 |
| Theta hat (MLE) | 1.79E-04 | Theta star (bias corrected MLE) | 2.80E-04 |
| nu hat (MLE) | 19.58 | nu star (bias corrected) | 12.52 |
| MLE Mean (bias corrected) | 2.50E-04 | MLE Sd (bias corrected) | 2.64E-04 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.677 | nu hat (KM) | 35.21 |
| Approximate Chi Square Value (35.21, α) | 22.64 | Adjusted Chi Square Value (35.21, β) | 21.97 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 2.18E-04 | 95% Gamma Adjusted KM-UCL (use when n<50) | 2.25E-04 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 1.00E-04 | Mean | 0.00738 |
| Maximum | 0.01 | Median | 0.01 |
| SD | 0.00441 | CV | 0.598 |
| k hat (MLE) | 0.752 | k star (bias corrected MLE) | 0.691 |
| Theta hat (MLE) | 0.00981 | Theta star (bias corrected MLE) | 0.0107 |
| nu hat (MLE) | 39.1 | nu star (bias corrected) | 35.92 |
| MLE Mean (bias corrected) | 0.00738 | MLE Sd (bias corrected) | 0.00887 |
| | | Adjusted Level of Significance (β) | 0.0398 |
| Approximate Chi Square Value (35.92, α) | 23.2 | Adjusted Chi Square Value (35.92, β) | 22.53 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0114 | 95% Gamma Adjusted UCL (use when n<50) | 0.0118 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.647 | **Shapiro Wilk GOF Test** | |

| | | | |
|---|---|---|---|
| 5% Shapiro Wilk Critical Value | 0.803 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.381 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.335 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 7.94E-05 | Mean in Log Scale | -10.75 |
| SD in Original Scale | 1.92E-04 | SD in Log Scale | 1.65 |
| 95% t UCL (assumes normality of ROS data) | 1.44E-04 | 95% Percentile Bootstrap UCL | 1.50E-04 |
| 95% BCA Bootstrap UCL | 1.93E-04 | 95% Bootstrap t UCL | 2.95E-04 |
| 95% H-UCL (Log ROS) | 2.61E-04 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 1.04E-04 | Mean in Log Scale | -9.577 |
| SD in Original Scale | 1.84E-04 | SD in Log Scale | 0.674 |
| 95% t UCL (Assumes normality) | 1.65E-04 | 95% H-Stat UCL | 1.16E-04 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 2.02E-04 | 95% KM (% Bootstrap) UCL | 2.08E-04 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**THALLIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 26 | Number of Distinct Observations | 3 |
| Number of Detects | 1 | Number of Non-Detects | 25 |
| Number of Distinct Detects | 1 | Number of Distinct Non-Detects | 2 |

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!

It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable THALLIUM was not processed!

**VANADIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 26 | Number of Distinct Observations | 15 |
| Number of Detects | 15 | Number of Non-Detects | 11 |
| Number of Distinct Detects | 14 | Number of Distinct Non-Detects | 2 |

| | | | |
|---|---|---|---|
| Minimum Detect | 3.90E-04 | Minimum Non-Detect | 5.00E-04 |
| Maximum Detect | 0.0323 | Maximum Non-Detect | 0.0012 |
| Variance Detects | 6.22E-05 | Percent Non-Detects | 42.31% |
| Mean Detects | 0.00433 | SD Detects | 0.00789 |
| Median Detects | 0.0026 | CV Detects | 1.823 |
| Skewness Detects | 3.626 | Kurtosis Detects | 13.63 |
| Mean of Logged Detects | -6.136 | SD of Logged Detects | 1.081 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.46 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.881 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.384 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.229 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.00272 | Standard Error of Mean | 0.00124 |
| SD | 0.00609 | 95% KM (BCA) UCL | 0.0051 |
| 95% KM (t) UCL | 0.00483 | 95% KM (Percentile Bootstrap) UCL | 0.00506 |
| 95% KM (z) UCL | 0.00475 | 95% KM Bootstrap t UCL | 0.0101 |
| 90% KM Chebyshev UCL | 0.00643 | 95% KM Chebyshev UCL | 0.00811 |
| 97.5% KM Chebyshev UCL | 0.0104 | 99% KM Chebyshev UCL | 0.015 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.03 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.77 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.223 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.229 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data follow Appr. Gamma Distribution at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.849 | k star (bias corrected MLE) | 0.724 |
| Theta hat (MLE) | 0.00509 | Theta star (bias corrected MLE) | 0.00598 |
| nu hat (MLE) | 25.48 | nu star (bias corrected) | 21.72 |
| MLE Mean (bias corrected) | 0.00433 | MLE Sd (bias corrected) | 0.00509 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.2 | nu hat (KM) | 10.38 |
| Approximate Chi Square Value (10.38, α) | 4.178 | Adjusted Chi Square Value (10.38, β) | 3.921 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.00675 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.0072 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 3.90E-04 | Mean | 0.00673 |
| Maximum | 0.0323 | Median | 0.00505 |
| SD | 0.00656 | CV | 0.975 |

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.165 | k star (bias corrected MLE) | 1.056 |
| Theta hat (MLE) | 0.00577 | Theta star (bias corrected MLE) | 0.00637 |
| nu hat (MLE) | 60.6 | nu star (bias corrected) | 54.94 |
| MLE Mean (bias corrected) | 0.00673 | MLE Sd (bias corrected) | 0.00654 |
| | | Adjusted Level of Significance (β) | 0.0398 |
| Approximate Chi Square Value (54.94, α) | 38.9 | Adjusted Chi Square Value (54.94, β) | 38.01 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0095 | 95% Gamma Adjusted UCL (use when n<50) | 0.00972 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.942 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.881 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.137 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.229 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.00268 | Mean in Log Scale | -6.912 |
| SD in Original Scale | 0.00622 | SD in Log Scale | 1.312 |
| 95% t UCL (assumes normality of ROS data) | 0.00477 | 95% Percentile Bootstrap UCL | 0.00482 |
| 95% BCA Bootstrap UCL | 0.00646 | 95% Bootstrap t UCL | 0.0101 |
| 95% H-UCL (Log ROS) | 0.00509 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -6.767 | 95% H-UCL (KM -Log) | 0.00383 |
| KM SD (logged) | 1.109 | 95% Critical H Value (KM-Log) | 2.651 |
| KM Standard Error of Mean (logged) | 0.233 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.0027 | Mean in Log Scale | -6.814 |
| SD in Original Scale | 0.00622 | SD in Log Scale | 1.176 |
| 95% t UCL (Assumes normality) | 0.00478 | 95% H-Stat UCL | 0.00418 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (BCA) UCL | 0.0051 | 95% GROS Adjusted Gamma UCL | 0.00972 |
| 95% Adjusted Gamma KM-UCL | 0.0072 | | |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 26 | Number of Distinct Observations | 25 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.0081 | Mean | 0.114 |
| Maximum | 2.2 | Median | 0.0275 |
| SD | 0.426 | Std. Error of Mean | 0.0835 |
| Coefficient of Variation | 3.737 | Skewness | 5.083 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.234 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.92 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.496 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.174 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 0.257 | 95% Adjusted-CLT UCL (Chen-1995) | 0.34 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.271 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 5.369 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.812 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.367 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.182 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.482 | k star (bias corrected MLE) | 0.452 |
| Theta hat (MLE) | 0.236 | Theta star (bias corrected MLE) | 0.252 |
| nu hat (MLE) | 25.08 | nu star (bias corrected) | 23.52 |
| MLE Mean (bias corrected) | 0.114 | MLE Sd (bias corrected) | 0.169 |
| | | Approximate Chi Square Value (0.05) | 13.49 |
| Adjusted Level of Significance | 0.0398 | Adjusted Chi Square Value | 12.98 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 0.199 | 95% Adjusted Gamma UCL (use when n<50) | 0.206 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.749 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.92 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.221 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.174 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -4.816 | Mean of logged Data | -3.496 |
| Maximum of Logged Data | 0.788 | SD of logged Data | 1.065 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.0929 | 90% Chebyshev (MVUE) UCL | 0.0892 |
| 95% Chebyshev (MVUE) UCL | 0.106 | 97.5% Chebyshev (MVUE) UCL | 0.13 |
| 99% Chebyshev (MVUE) UCL | 0.176 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.251 | 95% Jackknife UCL | 0.257 |
| 95% Standard Bootstrap UCL | 0.245 | 95% Bootstrap-t UCL | 2.615 |
| 95% Hall's Bootstrap UCL | 1.104 | 95% Percentile Bootstrap UCL | 0.281 |
| 95% BCA Bootstrap UCL | 0.371 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.365 | 95% Chebyshev(Mean, Sd) UCL | 0.478 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.636 | 99% Chebyshev(Mean, Sd) UCL | 0.945 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 0.478 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

| Analyte | Exp Area | Matrix | Valid Obs | Rec. UCL | Method | Max | EPC=Max |
|---|---|---|---|---|---|---|---|
| ALUMINUM | KWL | Surface water | 12 | 1.4 | 95% Chebyshev (Mean, Sd) UCL | 2.6 | FALSE |
| ANTIMONY | KWL | Surface water | 12 | NA | NA | 0.0037 | TRUE |
| ARSENIC | KWL | Surface water | 12 | 0.017 | 95% Student's-t UCL | 0.031 | FALSE |
| CHROMIUM | KWL | Surface water | 12 | 0.0053 | 95% KM (t) UCL | 0.0094 | FALSE |
| COBALT | KWL | Surface water | 12 | NA | NA | 0.0016 | TRUE |
| CYANIDE | KWL | Surface water | 12 | 0.0018 | 95% KM (t) UCL | 0.0034 | FALSE |
| IRON | KWL | Surface water | 12 | 3.6 | 95% Chebyshev (Mean, Sd) UCL | 5.5 | FALSE |
| LEAD | KWL | Surface water | 12 | 0.065 | 95% Chebyshev (Mean, Sd) UCL | 0.099 | FALSE |
| MANGANESE | KWL | Surface water | 12 | 0.080 | 95% Student's-t UCL | 0.15 | FALSE |
| THALLIUM | KWL | Surface water | 12 | NA | NA | 0.0058 | TRUE |

SW_KWL_7.10.17.xlsx

**UCL Statistics for Data Sets with Non-Detects**

| | |
|---|---|
| User Selected Options | |
| Date/Time of Computation | 7/10/2017 11:16:57 AM |
| From File | SW_KWL_7.10.17.xlsx |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Number of Bootstrap Operations | 2000 |

**ALUMINUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 12 | Number of Distinct Observations | 12 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.0752 | Mean | 0.468 |
| Maximum | 2.64 | Median | 0.209 |
| SD | 0.719 | Std. Error of Mean | 0.207 |
| Coefficient of Variation | 1.535 | Skewness | 2.944 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.548 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.859 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.38 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.256 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 0.841 | 95% Adjusted-CLT UCL (Chen-1995) | 0.998 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.87 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.283 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.757 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.359 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.253 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.984 | k star (bias corrected MLE) | 0.793 |
| Theta hat (MLE) | 0.476 | Theta star (bias corrected MLE) | 0.59 |
| nu hat (MLE) | 23.61 | nu star (bias corrected) | 19.04 |
| MLE Mean (bias corrected) | 0.468 | MLE Sd (bias corrected) | 0.526 |
| | | Approximate Chi Square Value (0.05) | 10.15 |
| Adjusted Level of Significance | 0.029 | Adjusted Chi Square Value | 9.173 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 0.879 | 95% Adjusted Gamma UCL (use when n<50) | 0.972 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.866 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.859 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.3 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.256 | Data Not Lognormal at 5% Significance Level | |

Data appear Approximate Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -2.588 | Mean of logged Data | -1.347 |
| Maximum of Logged Data | 0.971 | SD of logged Data | 0.988 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 1.004 | 90% Chebyshev (MVUE) UCL | 0.768 |
| 95% Chebyshev (MVUE) UCL | 0.934 | 97.5% Chebyshev (MVUE) UCL | 1.165 |
| 99% Chebyshev (MVUE) UCL | 1.618 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.809 | 95% Jackknife UCL | 0.841 |
| 95% Standard Bootstrap UCL | 0.795 | 95% Bootstrap-t UCL | 1.566 |
| 95% Hall's Bootstrap UCL | 1.799 | 95% Percentile Bootstrap UCL | 0.849 |
| 95% BCA Bootstrap UCL | 1.045 | | |
| 90% Chebyshev(Mean, Sd) UCL | 1.091 | 95% Chebyshev(Mean, Sd) UCL | 1.373 |
| 97.5% Chebyshev(Mean, Sd) UCL | 1.764 | 99% Chebyshev(Mean, Sd) UCL | 2.532 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 1.373 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**ANTIMONY**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 12 | Number of Distinct Observations | 3 |
| Number of Detects | 1 | Number of Non-Detects | 11 |
| Number of Distinct Detects | 1 | Number of Distinct Non-Detects | 2 |

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable ANTIMONY was not processed!

**ARSENIC**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 12 | Number of Distinct Observations | 12 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.0066 | Mean | 0.0128 |
| Maximum | 0.0309 | Median | 0.00935 |
| SD | 0.00749 | Std. Error of Mean | 0.00216 |
| Coefficient of Variation | 0.584 | Skewness | 1.679 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.744 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.859 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.324 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.256 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
|---|---|---|---|
| 95% Student's-t UCL | 0.0167 | 95% Adjusted-CLT UCL (Chen-1995) | 0.0175 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.0169 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.148 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.735 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.311 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.246 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 4.328 | k star (bias corrected MLE) | 3.301 |
| Theta hat (MLE) | 0.00296 | Theta star (bias corrected MLE) | 0.00388 |
| nu hat (MLE) | 103.9 | nu star (bias corrected) | 79.24 |
| MLE Mean (bias corrected) | 0.0128 | MLE Sd (bias corrected) | 0.00706 |
| | | Approximate Chi Square Value (0.05) | 59.73 |
| Adjusted Level of Significance | 0.029 | Adjusted Chi Square Value | 57.15 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 0.017 | 95% Adjusted Gamma UCL (use when n<50) | 0.0178 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.841 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.859 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.289 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.256 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -5.021 | Mean of logged Data | -4.476 |
| Maximum of Logged Data | -3.477 | SD of logged Data | 0.479 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.0173 | 90% Chebyshev (MVUE) UCL | 0.018 |
| 95% Chebyshev (MVUE) UCL | 0.0204 | 97.5% Chebyshev (MVUE) UCL | 0.0238 |
| 99% Chebyshev (MVUE) UCL | 0.0304 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.0164 | 95% Jackknife UCL | 0.0167 |
| 95% Standard Bootstrap UCL | 0.0163 | 95% Bootstrap-t UCL | 0.02 |
| 95% Hall's Bootstrap UCL | 0.0173 | 95% Percentile Bootstrap UCL | 0.0165 |
| 95% BCA Bootstrap UCL | 0.0172 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.0193 | 95% Chebyshev(Mean, Sd) UCL | 0.0222 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.0263 | 99% Chebyshev(Mean, Sd) UCL | 0.0343 |

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% Student's-t UCL | 0.0167 | or 95% Modified-t UCL | 0.0169 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**CHROMIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 12 | Number of Distinct Observations | 4 |
| Number of Detects | 3 | Number of Non-Detects | 9 |
| Number of Distinct Detects | 3 | Number of Distinct Non-Detects | 1 |
| Minimum Detect | 0.0062 | Minimum Non-Detect | 0.0023 |
| Maximum Detect | 0.0094 | Maximum Non-Detect | 0.0023 |
| Variance Detects | 2.64E-06 | Percent Non-Detects | 75% |
| Mean Detects | 0.00797 | SD Detects | 0.00163 |
| Median Detects | 0.0083 | CV Detects | 0.204 |
| Skewness Detects | -0.884 | Kurtosis Detects | N/A |
| Mean of Logged Detects | -4.847 | SD of Logged Detects | 0.214 |

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.968 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.767 | Detected Data appear Normal at 5% Significance Level | |

| | | | |
|---|---|---|---|
| Lilliefors Test Statistic | 0.248 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.512 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.00372 | Standard Error of Mean | 8.99E-04 |
| SD | 0.00254 | 95% KM (BCA) UCL | N/A |
| 95% KM (t) UCL | 0.00533 | 95% KM (Percentile Bootstrap) UCL | N/A |
| 95% KM (z) UCL | 0.00519 | 95% KM Bootstrap t UCL | N/A |
| 90% KM Chebyshev UCL | 0.00641 | 95% KM Chebyshev UCL | 0.00763 |
| 97.5% KM Chebyshev UCL | 0.00933 | 99% KM Chebyshev UCL | 0.0127 |

**Gamma GOF Tests on Detected Observations Only**

Not Enough Data to Perform GOF Test

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 34.04 | k star (bias corrected MLE) | N/A |
| Theta hat (MLE) | 2.34E-04 | Theta star (bias corrected MLE) | N/A |
| nu hat (MLE) | 204.2 | nu star (bias corrected) | N/A |
| MLE Mean (bias corrected) | N/A | MLE Sd (bias corrected) | N/A |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 2.138 | nu hat (KM) | 51.31 |
| | | Adjusted Level of Significance (β) | 0.029 |
| Approximate Chi Square Value (51.31, α) | 35.86 | Adjusted Chi Square Value (51.31, β) | 33.9 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.00532 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.00563 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.949 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.767 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.27 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.512 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.00436 | Mean in Log Scale | -5.578 |
| SD in Original Scale | 0.00248 | SD in Log Scale | 0.557 |
| 95% t UCL (assumes normality of ROS data) | 0.00564 | 95% Percentile Bootstrap UCL | 0.00555 |
| 95% BCA Bootstrap UCL | 0.00566 | 95% Bootstrap t UCL | 0.00626 |
| 95% H-UCL (Log ROS) | 0.0064 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -5.768 | 95% H-UCL (KM -Log) | 0.00516 |
| KM SD (logged) | 0.539 | 95% Critical H Value (KM-Log) | 2.189 |
| KM Standard Error of Mean (logged) | 0.19 | | |

**DL/2 Statistics**

| | | | |
|---|---|---|---|
| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
| Mean in Original Scale | 0.00285 | Mean in Log Scale | -6.288 |

| | | | |
|---|---|---|---|
| SD in Original Scale | 0.00316 | SD in Log Scale | 0.873 |
| 95% t UCL (Assumes normality) | 0.00449 | 95% H-Stat UCL | 0.00553 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.00533 | 95% KM (Percentile Bootstrap) UCL | N/A |

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**COBALT**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 12 | Number of Distinct Observations | 3 |
| Number of Detects | 1 | Number of Non-Detects | 11 |
| Number of Distinct Detects | 1 | Number of Distinct Non-Detects | 2 |

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable COBALT was not processed!

**CYANIDE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 12 | Number of Distinct Observations | 6 |
| Number of Detects | 3 | Number of Non-Detects | 9 |
| Number of Distinct Detects | 3 | Number of Distinct Non-Detects | 3 |
| Minimum Detect | 0.0024 | Minimum Non-Detect | 6.00E-04 |
| Maximum Detect | 0.0034 | Maximum Non-Detect | 0.0011 |
| Variance Detects | 2.63E-07 | Percent Non-Detects | 75% |
| Mean Detects | 0.00283 | SD Detects | 5.13E-04 |
| Median Detects | 0.0027 | CV Detects | 0.181 |
| Skewness Detects | 1.09 | Kurtosis Detects | N/A |
| Mean of Logged Detects | -5.877 | SD of Logged Detects | 0.177 |

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.949 | **Shapiro Wilk GOF Test** | |

| | | | |
|---|---|---|---|
| 5% Shapiro Wilk Critical Value | 0.767 | Detected Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.269 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.512 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.00116 | Standard Error of Mean | 3.50E-04 |
| SD | 9.89E-04 | 95% KM (BCA) UCL | N/A |
| 95% KM (t) UCL | 0.00179 | 95% KM (Percentile Bootstrap) UCL | N/A |
| 95% KM (z) UCL | 0.00173 | 95% KM Bootstrap t UCL | N/A |
| 90% KM Chebyshev UCL | 0.00221 | 95% KM Chebyshev UCL | 0.00268 |
| 97.5% KM Chebyshev UCL | 0.00334 | 99% KM Chebyshev UCL | 0.00464 |

**Gamma GOF Tests on Detected Observations Only**

Not Enough Data to Perform GOF Test

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 47.24 | k star (bias corrected MLE) | N/A |
| Theta hat (MLE) | 6.00E-05 | Theta star (bias corrected MLE) | N/A |
| nu hat (MLE) | 283.4 | nu star (bias corrected) | N/A |
| MLE Mean (bias corrected) | N/A | MLE Sd (bias corrected) | N/A |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 1.37 | nu hat (KM) | 32.89 |
| | | Adjusted Level of Significance (β) | 0.029 |
| Approximate Chi Square Value (32.89, α) | 20.78 | Adjusted Chi Square Value (32.89, β) | 19.32 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.00183 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.00197 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.966 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.767 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.251 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.512 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.00164 | Mean in Log Scale | -6.509 |
| SD in Original Scale | 8.03E-04 | SD in Log Scale | 0.458 |
| 95% t UCL (assumes normality of ROS data) | 0.00206 | 95% Percentile Bootstrap UCL | 0.00202 |
| 95% BCA Bootstrap UCL | 0.00212 | 95% Bootstrap t UCL | 0.00218 |
| 95% H-UCL (Log ROS) | 0.00221 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -7.033 | 95% H-UCL (KM -Log) | 0.00179 |
| KM SD (logged) | 0.671 | 95% Critical H Value (KM-Log) | 2.372 |
| KM Standard Error of Mean (logged) | 0.237 | | |

**DL/2 Statistics**

**DL/2 Normal** **DL/2 Log-Transformed**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 9.65E-04 | Mean in Log Scale | -7.473 |
| SD in Original Scale | 0.00115 | SD in Log Scale | 0.983 |
| 95% t UCL (Assumes normality) | 0.00156 | 95% H-Stat UCL | 0.00217 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.00179 | 95% KM (Percentile Bootstrap) UCL | N/A |

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**IRON**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 12 | Number of Distinct Observations | 11 |
| | | Number of Missing Observations | 0 |
| Minimum | 1.07 | Mean | 1.845 |
| Maximum | 5.47 | Median | 1.18 |
| SD | 1.388 | Std. Error of Mean | 0.401 |
| Coefficient of Variation | 0.752 | Skewness | 2.07 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.612 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.859 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.429 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.256 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 2.564 | 95% Adjusted-CLT UCL (Chen-1995) | 2.76 |
| | | 95% Modified-t UCL (Johnson-1978) | 2.604 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.175 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.739 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.441 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.247 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 3.031 | k star (bias corrected MLE) | 2.329 |

| | | | |
|---|---|---|---|
| Theta hat (MLE) | 0.609 | Theta star (bias corrected MLE) | 0.792 |
| nu hat (MLE) | 72.74 | nu star (bias corrected) | 55.89 |
| MLE Mean (bias corrected) | 1.845 | MLE Sd (bias corrected) | 1.209 |
| | | Approximate Chi Square Value (0.05) | 39.7 |
| Adjusted Level of Significance | 0.029 | Adjusted Chi Square Value | 37.63 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 2.597 | 95% Adjusted Gamma UCL (use when n<50) | 2.74 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.655 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.859 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.428 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.256 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | 0.0677 | Mean of logged Data | 0.439 |
| Maximum of Logged Data | 1.699 | SD of logged Data | 0.554 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 2.615 | 90% Chebyshev (MVUE) UCL | 2.661 |
| 95% Chebyshev (MVUE) UCL | 3.06 | 97.5% Chebyshev (MVUE) UCL | 3.613 |
| 99% Chebyshev (MVUE) UCL | 4.699 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 2.504 | 95% Jackknife UCL | 2.564 |
| 95% Standard Bootstrap UCL | 2.469 | 95% Bootstrap-t UCL | 3.653 |
| 95% Hall's Bootstrap UCL | 2.923 | 95% Percentile Bootstrap UCL | 2.518 |
| 95% BCA Bootstrap UCL | 2.727 | | |
| 90% Chebyshev(Mean, Sd) UCL | 3.047 | 95% Chebyshev(Mean, Sd) UCL | 3.591 |
| 97.5% Chebyshev(Mean, Sd) UCL | 4.347 | 99% Chebyshev(Mean, Sd) UCL | 5.831 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 3.591 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**LEAD**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 12 | Number of Distinct Observations | 10 |

| | | | |
|---|---|---|---|
| | | Number of Missing Observations | 0 |
| Minimum | 0.0146 | Mean | 0.0294 |
| Maximum | 0.0993 | Median | 0.0161 |
| SD | 0.0282 | Std. Error of Mean | 0.00815 |
| Coefficient of Variation | 0.96 | Skewness | 2.065 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.584 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.859 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.398 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.256 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 0.044 | 95% Adjusted-CLT UCL (Chen-1995) | 0.048 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.0448 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.178 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.741 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.388 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.249 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 2.019 | k star (bias corrected MLE) | 1.57 |
| Theta hat (MLE) | 0.0146 | Theta star (bias corrected MLE) | 0.0187 |
| nu hat (MLE) | 48.46 | nu star (bias corrected) | 37.68 |
| MLE Mean (bias corrected) | 0.0294 | MLE Sd (bias corrected) | 0.0235 |
| | | Approximate Chi Square Value (0.05) | 24.62 |
| Adjusted Level of Significance | 0.029 | Adjusted Chi Square Value | 23.02 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 0.045 | 95% Adjusted Gamma UCL (use when n<50) | 0.0481 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.657 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.859 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.359 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.256 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -4.227 | Mean of logged Data | -3.794 |
| Maximum of Logged Data | -2.31 | SD of logged Data | 0.671 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.0455 | 90% Chebyshev (MVUE) UCL | 0.0442 |

| | | | |
|---|---|---|---|
| 95% Chebyshev (MVUE) UCL | 0.0517 | 97.5% Chebyshev (MVUE) UCL | 0.0622 |
| 99% Chebyshev (MVUE) UCL | 0.0828 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.0428 | 95% Jackknife UCL | 0.044 |
| 95% Standard Bootstrap UCL | 0.0422 | 95% Bootstrap-t UCL | 0.0987 |
| 95% Hall's Bootstrap UCL | 0.124 | 95% Percentile Bootstrap UCL | 0.0436 |
| 95% BCA Bootstrap UCL | 0.0473 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.0539 | 95% Chebyshev(Mean, Sd) UCL | 0.0649 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.0803 | 99% Chebyshev(Mean, Sd) UCL | 0.11 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 0.0649 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**MANGANESE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 12 | Number of Distinct Observations | 12 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.0445 | Mean | 0.0631 |
| Maximum | 0.151 | Median | 0.0496 |
| SD | 0.0316 | Std. Error of Mean | 0.00912 |
| Coefficient of Variation | 0.501 | Skewness | 2.343 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.636 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.859 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.366 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.256 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 0.0795 | 95% Adjusted-CLT UCL (Chen-1995) | 0.0847 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.0805 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.659 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.731 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.353 | **Kolmogrov-Smirnoff Gamma GOF Test** | |

| | | | |
|---|---|---|---|
| 5% K-S Critical Value | 0.246 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 6.459 | k star (bias corrected MLE) | 4.9 |
| Theta hat (MLE) | 0.00977 | Theta star (bias corrected MLE) | 0.0129 |
| nu hat (MLE) | 155 | nu star (bias corrected) | 117.6 |
| MLE Mean (bias corrected) | 0.0631 | MLE Sd (bias corrected) | 0.0285 |
| | | Approximate Chi Square Value (0.05) | 93.56 |
| Adjusted Level of Significance | 0.029 | Adjusted Chi Square Value | 90.29 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 0.0793 | 95% Adjusted Gamma UCL (use when n<50) | 0.0822 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.717 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.859 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.333 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.256 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -3.112 | Mean of logged Data | -2.843 |
| Maximum of Logged Data | -1.89 | SD of logged Data | 0.38 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.0788 | 90% Chebyshev (MVUE) UCL | 0.083 |
| 95% Chebyshev (MVUE) UCL | 0.0924 | 97.5% Chebyshev (MVUE) UCL | 0.105 |
| 99% Chebyshev (MVUE) UCL | 0.131 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.0781 | 95% Jackknife UCL | 0.0795 |
| 95% Standard Bootstrap UCL | 0.0773 | 95% Bootstrap-t UCL | 0.104 |
| 95% Hall's Bootstrap UCL | 0.121 | 95% Percentile Bootstrap UCL | 0.079 |
| 95% BCA Bootstrap UCL | 0.0855 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.0905 | 95% Chebyshev(Mean, Sd) UCL | 0.103 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.12 | 99% Chebyshev(Mean, Sd) UCL | 0.154 |

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% Student's-t UCL | 0.0795 | or 95% Modified-t UCL | 0.0805 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**THALLIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 12 | Number of Distinct Observations | 3 |
| Number of Detects | 1 | Number of Non-Detects | 11 |
| Number of Distinct Detects | 1 | Number of Distinct Non-Detects | 2 |

**Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!**

**It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).**

**The data set for variable THALLIUM was not processed!**

| Analyte | Exp Area | Matrix | Valid Obs | Rec. UCL | Method | Max | EPC=Max |
|---|---|---|---|---|---|---|---|
| ARSENIC | SL | Surface water | 16 | 0.0078 | 95% KM (t) UCL | 0.013 | FALSE |
| CHROMIUM | SL | Surface water | 16 | 0.0026 | 95% KM (t) UCL | 0.0026 | FALSE |
| COBALT | SL | Surface water | 16 | 0.0021 | 95% KM (t) UCL | 0.0080 | FALSE |
| CYANIDE | SL | Surface water | 16 | 0.0044 | 95% KM (t) UCL | 0.0053 | FALSE |
| IRON | SL | Surface water | 16 | 11 | 95% Chebyshev (Mean, Sd) UCL | 30 | FALSE |
| MANGANESE | SL | Surface water | 16 | 0.95 | 95% Chebyshev (Mean, Sd) UCL | 2.5 | FALSE |
| BENZO(A)ANTHRACENE | SL | Surface water | 19 | 0.000067 | 95% KM (t) UCL | 0.00024 | FALSE |
| BENZO(A)PYRENE | SL | Surface water | 19 | 0.00020 | 95% KM (t) UCL | 0.00053 | FALSE |
| BENZO(B)FLUORANTHENE | SL | Surface water | 19 | 0.00013 | 95% KM (t) UCL | 0.00048 | FALSE |
| BIS(2-ETHYLHEXYL) PHTHALATE | SL | Surface water | 19 | 0.0018 | 95% KM (t) UCL | 0.0058 | FALSE |
| DIBENZO(A,H)ANTHRACENE | SL | Surface water | 19 | 0.000068 | 95% KM (t) UCL | 0.00010 | FALSE |
| INDENO(1,2,3-CD)PYRENE | SL | Surface water | 19 | 0.000088 | 95% KM (t) UCL | 0.00027 | FALSE |

SW_SL_7.10.17.xlsx

## UCL Statistics for Data Sets with Non-Detects

| | |
|---|---|
| User Selected Options | |
| Date/Time of Computation | 7/10/2017 11:17:42 AM |
| From File | SW_SL_7.10.17.xlsx |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Number of Bootstrap Operations | 2000 |

## ARSENIC

### General Statistics

| | | | |
|---|---|---|---|
| Total Number of Observations | 16 | Number of Distinct Observations | 3 |
| | | Number of Missing Observations | 3 |
| Number of Detects | 2 | Number of Non-Detects | 14 |
| Number of Distinct Detects | 2 | Number of Distinct Non-Detects | 1 |
| Minimum Detect | 0.0065 | Minimum Non-Detect | 0.01 |
| Maximum Detect | 0.0128 | Maximum Non-Detect | 0.01 |
| Variance Detects | 1.98E-05 | Percent Non-Detects | 87.50% |
| Mean Detects | 0.00965 | SD Detects | 0.00445 |
| Median Detects | 0.00965 | CV Detects | 0.462 |
| Skewness Detects | N/A | Kurtosis Detects | N/A |
| Mean of Logged Detects | -4.697 | SD of Logged Detects | 0.479 |

**Warning: Data set has only 2 Detected Values.**

**This is not enough to compute meaningful or reliable statistics and estimates.**

### Normal GOF Test on Detects Only

**Not Enough Data to Perform GOF Test**

### Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

| | | | |
|---|---|---|---|
| Mean | 0.00689 | Standard Error of Mean | 5.39E-04 |
| SD | 0.00152 | 95% KM (BCA) UCL | N/A |
| 95% KM (t) UCL | 0.00784 | 95% KM (Percentile Bootstrap) UCL | N/A |
| 95% KM (z) UCL | 0.00778 | 95% KM Bootstrap t UCL | N/A |
| 90% KM Chebyshev UCL | 0.00851 | 95% KM Chebyshev UCL | 0.00924 |
| 97.5% KM Chebyshev UCL | 0.0103 | 99% KM Chebyshev UCL | 0.0123 |

### Gamma GOF Tests on Detected Observations Only

**Not Enough Data to Perform GOF Test**

### Gamma Statistics on Detected Data Only

| | | | |
|---|---|---|---|
| k hat (MLE) | 9.039 | k star (bias corrected MLE) | N/A |
| Theta hat (MLE) | 0.00107 | Theta star (bias corrected MLE) | N/A |
| nu hat (MLE) | 36.16 | nu star (bias corrected) | N/A |
| MLE Mean (bias corrected) | N/A | MLE Sd (bias corrected) | N/A |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 20.44 | nu hat (KM) | 653.9 |
| | | Adjusted Level of Significance (β) | 0.0335 |
| Approximate Chi Square Value (653.93, α) | 595.6 | Adjusted Chi Square Value (653.93, β) | 589.3 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.00757 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.00765 |

**Lognormal GOF Test on Detected Observations Only**

Not Enough Data to Perform GOF Test

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.00703 | Mean in Log Scale | -5.003 |
| SD in Original Scale | 0.00227 | SD in Log Scale | 0.308 |
| 95% t UCL (assumes normality of ROS data) | 0.00802 | 95% Percentile Bootstrap UCL | 0.00796 |
| 95% BCA Bootstrap UCL | 0.00804 | 95% Bootstrap t UCL | 0.00832 |
| 95% H-UCL (Log ROS) | 0.00818 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.00558 | Mean in Log Scale | -5.223 |
| SD in Original Scale | 0.00196 | SD in Log Scale | 0.24 |
| 95% t UCL (Assumes normality) | 0.00644 | 95% H-Stat UCL | 0.00621 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.00784 | 95% KM (% Bootstrap) UCL | N/A |

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**CHROMIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 16 | Number of Distinct Observations | 5 |
| | | Number of Missing Observations | 3 |
| Number of Detects | 4 | Number of Non-Detects | 12 |
| Number of Distinct Detects | 4 | Number of Distinct Non-Detects | 1 |
| Minimum Detect | 0.001 | Minimum Non-Detect | 0.01 |
| Maximum Detect | 0.0026 | Maximum Non-Detect | 0.01 |
| Variance Detects | 7.09E-07 | Percent Non-Detects | 75% |
| Mean Detects | 0.00183 | SD Detects | 8.42E-04 |
| Median Detects | 0.00185 | CV Detects | 0.461 |
| Skewness Detects | -0.0364 | Kurtosis Detects | -5.651 |
| Mean of Logged Detects | -6.394 | SD of Logged Detects | 0.494 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.816 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.748 | Detected Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.289 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.443 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.00183 | Standard Error of Mean | 4.21E-04 |
| SD | 7.29E-04 | 95% KM (BCA) UCL | N/A |
| 95% KM (t) UCL | 0.00256 | 95% KM (Percentile Bootstrap) UCL | N/A |
| 95% KM (z) UCL | 0.00252 | 95% KM Bootstrap t UCL | N/A |
| 90% KM Chebyshev UCL | 0.00309 | 95% KM Chebyshev UCL | 0.00366 |
| 97.5% KM Chebyshev UCL | 0.00445 | 99% KM Chebyshev UCL | 0.00601 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.525 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.659 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.326 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.396 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 5.84 | k star (bias corrected MLE) | 1.627 |
| Theta hat (MLE) | 3.12E-04 | Theta star (bias corrected MLE) | 0.00112 |
| nu hat (MLE) | 46.72 | nu star (bias corrected) | 13.01 |
| MLE Mean (bias corrected) | 0.00183 | MLE Sd (bias corrected) | 0.00143 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 6.262 | nu hat (KM) | 200.4 |
| Approximate Chi Square Value (200.39, α) | 168.6 | Adjusted Chi Square Value (200.39, β) | 165.3 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.00217 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.00221 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.001 | Mean | 0.00796 |
| Maximum | 0.01 | Median | 0.01 |
| SD | 0.00368 | CV | 0.462 |
| k hat (MLE) | 2.441 | k star (bias corrected MLE) | 2.025 |
| Theta hat (MLE) | 0.00326 | Theta star (bias corrected MLE) | 0.00393 |
| nu hat (MLE) | 78.1 | nu star (bias corrected) | 64.79 |
| MLE Mean (bias corrected) | 0.00796 | MLE Sd (bias corrected) | 0.00559 |
| | | Adjusted Level of Significance (β) | 0.0335 |
| Approximate Chi Square Value (64.79, α) | 47.27 | Adjusted Chi Square Value (64.79, β) | 45.57 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0109 | 95% Gamma Adjusted UCL (use when n<50) | N/A |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.832 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.748 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.293 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.443 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.00189 | Mean in Log Scale | -6.394 |
| SD in Original Scale | 9.65E-04 | SD in Log Scale | 0.516 |
| 95% t UCL (assumes normality of ROS data) | 0.00231 | 95% Percentile Bootstrap UCL | 0.00228 |
| 95% BCA Bootstrap UCL | 0.0023 | 95% Bootstrap t UCL | 0.00238 |
| 95% H-UCL (Log ROS) | 0.00251 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -6.394 | 95% H-UCL (KM -Log) | 0.00228 |
| KM SD (logged) | 0.427 | 95% Critical H Value (KM-Log) | 1.979 |
| KM Standard Error of Mean (logged) | 0.247 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.00421 | Mean in Log Scale | -5.572 |
| SD in Original Scale | 0.00147 | SD in Log Scale | 0.538 |
| 95% t UCL (Assumes normality) | 0.00485 | 95% H-Stat UCL | 0.00587 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.00256 | 95% KM (Percentile Bootstrap) UCL | N/A |

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**COBALT**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 16 | Number of Distinct Observations | 5 |
| | | Number of Missing Observations | 3 |
| Number of Detects | 4 | Number of Non-Detects | 12 |
| Number of Distinct Detects | 4 | Number of Distinct Non-Detects | 1 |
| Minimum Detect | 5.80E-04 | Minimum Non-Detect | 0.001 |
| Maximum Detect | 0.008 | Maximum Non-Detect | 0.001 |
| Variance Detects | 1.28E-05 | Percent Non-Detects | 75% |

| | | | |
|---|---|---|---|
| Mean Detects | 0.00265 | SD Detects | 0.00358 |
| Median Detects | 0.001 | CV Detects | 1.352 |
| Skewness Detects | 1.978 | Kurtosis Detects | 3.93 |
| Mean of Logged Detects | -6.527 | SD of Logged Detects | 1.163 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.687 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.748 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.417 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.443 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Approximate Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.00122 | Standard Error of Mean | 5.19E-04 |
| SD | 0.00176 | 95% KM (BCA) UCL | N/A |
| 95% KM (t) UCL | 0.00213 | 95% KM (Percentile Bootstrap) UCL | N/A |
| 95% KM (z) UCL | 0.00207 | 95% KM Bootstrap t UCL | N/A |
| 90% KM Chebyshev UCL | 0.00277 | 95% KM Chebyshev UCL | 0.00348 |
| 97.5% KM Chebyshev UCL | 0.00446 | 99% KM Chebyshev UCL | 0.00638 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.636 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.667 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.405 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.403 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected data follow Appr. Gamma Distribution at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.978 | k star (bias corrected MLE) | 0.411 |
| Theta hat (MLE) | 0.0027 | Theta star (bias corrected MLE) | 0.00643 |
| nu hat (MLE) | 7.827 | nu star (bias corrected) | 3.29 |
| MLE Mean (bias corrected) | 0.00265 | MLE Sd (bias corrected) | 0.00412 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.478 | nu hat (KM) | 15.28 |
| Approximate Chi Square Value (15.28, α) | 7.457 | Adjusted Chi Square Value (15.28, β) | 6.842 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.00249 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.00272 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 5.80E-04 | Mean | 0.00816 |
| Maximum | 0.01 | Median | 0.01 |
| SD | 0.00366 | CV | 0.448 |
| k hat (MLE) | 1.954 | k star (bias corrected MLE) | 1.629 |
| Theta hat (MLE) | 0.00418 | Theta star (bias corrected MLE) | 0.00501 |
| nu hat (MLE) | 62.53 | nu star (bias corrected) | 52.14 |

| | | | |
|---|---|---|---|
| MLE Mean (bias corrected) | 0.00816 | MLE Sd (bias corrected) | 0.00639 |
| | | Adjusted Level of Significance (β) | 0.0335 |
| Approximate Chi Square Value (52.14, α) | 36.56 | Adjusted Chi Square Value (52.14, β) | 35.07 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0116 | 95% Gamma Adjusted UCL (use when n<50) | N/A |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.831 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.748 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.347 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.443 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.00125 | Mean in Log Scale | -7.124 |
| SD in Original Scale | 0.00185 | SD in Log Scale | 0.835 |
| 95% t UCL (assumes normality of ROS data) | 0.00206 | 95% Percentile Bootstrap UCL | 0.00216 |
| 95% BCA Bootstrap UCL | 0.00261 | 95% Bootstrap t UCL | 0.0042 |
| 95% H-UCL (Log ROS) | 0.00194 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -7.056 | 95% H-UCL (KM -Log) | 0.00148 |
| KM SD (logged) | 0.619 | 95% Critical H Value (KM-Log) | 2.182 |
| KM Standard Error of Mean (logged) | 0.23 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.00104 | Mean in Log Scale | -7.332 |
| SD in Original Scale | 0.00187 | SD in Log Scale | 0.708 |
| 95% t UCL (Assumes normality) | 0.00185 | 95% H-Stat UCL | 0.00128 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.00213 | 95% KM (Percentile Bootstrap) UCL | N/A |

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**CYANIDE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 16 | Number of Distinct Observations | 6 |
| | | Number of Missing Observations | 3 |
| Number of Detects | 5 | Number of Non-Detects | 11 |

| | | | |
|---|---|---|---|
| Number of Distinct Detects | 5 | Number of Distinct Non-Detects | 1 |
| Minimum Detect | 0.0021 | Minimum Non-Detect | 0.01 |
| Maximum Detect | 0.0053 | Maximum Non-Detect | 0.01 |
| Variance Detects | 1.76E-06 | Percent Non-Detects | 68.75% |
| Mean Detects | 0.0034 | SD Detects | 0.00133 |
| Median Detects | 0.0032 | CV Detects | 0.39 |
| Skewness Detects | 0.654 | Kurtosis Detects | -0.9 |
| Mean of Logged Detects | -5.744 | SD of Logged Detects | 0.388 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.932 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.762 | Detected Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.196 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.396 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.0034 | Standard Error of Mean | 5.93E-04 |
| SD | 0.00119 | 95% KM (BCA) UCL | 0.0043 |
| 95% KM (t) UCL | 0.00444 | 95% KM (Percentile Bootstrap) UCL | 0.00445 |
| 95% KM (z) UCL | 0.00438 | 95% KM Bootstrap t UCL | 0.00529 |
| 90% KM Chebyshev UCL | 0.00518 | 95% KM Chebyshev UCL | 0.00599 |
| 97.5% KM Chebyshev UCL | 0.00711 | 99% KM Chebyshev UCL | 0.0093 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.264 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.679 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.228 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.358 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 8.436 | k star (bias corrected MLE) | 3.508 |
| Theta hat (MLE) | 4.03E-04 | Theta star (bias corrected MLE) | 9.69E-04 |
| nu hat (MLE) | 84.36 | nu star (bias corrected) | 35.08 |
| MLE Mean (bias corrected) | 0.0034 | MLE Sd (bias corrected) | 0.00182 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 8.21 | nu hat (KM) | 262.7 |
| Approximate Chi Square Value (262.73, α) | 226.2 | Adjusted Chi Square Value (262.73, β) | 222.3 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.00395 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.00402 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.0021 | Mean | 0.00794 |
| Maximum | 0.01 | Median | 0.01 |

| | | | |
|---|---|---|---|
| SD | 0.00323 | CV | 0.407 |
| k hat (MLE) | 4.158 | k star (bias corrected MLE) | 3.42 |
| Theta hat (MLE) | 0.00191 | Theta star (bias corrected MLE) | 0.00232 |
| nu hat (MLE) | 133.1 | nu star (bias corrected) | 109.5 |
| MLE Mean (bias corrected) | 0.00794 | MLE Sd (bias corrected) | 0.00429 |
| | | Adjusted Level of Significance (β) | 0.0335 |
| Approximate Chi Square Value (109.45, α) | 86.31 | Adjusted Chi Square Value (109.45, β) | 83.97 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0101 | 95% Gamma Adjusted UCL (use when n<50) | 0.0103 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.946 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.762 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.203 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.396 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.00345 | Mean in Log Scale | -5.744 |
| SD in Original Scale | 0.0014 | SD in Log Scale | 0.404 |
| 95% t UCL (assumes normality of ROS data) | 0.00406 | 95% Percentile Bootstrap UCL | 0.004 |
| 95% BCA Bootstrap UCL | 0.00407 | 95% Bootstrap t UCL | 0.00416 |
| 95% H-UCL (Log ROS) | 0.00426 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -5.744 | 95% H-UCL (KM -Log) | 0.00403 |
| KM SD (logged) | 0.347 | 95% Critical H Value (KM-Log) | 1.909 |
| KM Standard Error of Mean (logged) | 0.174 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.0045 | Mean in Log Scale | -5.438 |
| SD in Original Scale | 0.00103 | SD in Log Scale | 0.293 |
| 95% t UCL (Assumes normality) | 0.00495 | 95% H-Stat UCL | 0.00523 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.00444 | 95% KM (Percentile Bootstrap) UCL | 0.00445 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**IRON**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 16 | Number of Distinct Observations | 16 |
| | | Number of Missing Observations | 3 |
| Minimum | 0.71 | Mean | 3.578 |
| Maximum | 29.6 | Median | 1.39 |
| SD | 7.124 | Std. Error of Mean | 1.781 |
| Coefficient of Variation | 1.991 | Skewness | 3.687 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.42 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.887 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.395 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.222 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 6.7 | 95% Adjusted-CLT UCL (Chen-1995) | 8.262 |
| | | 95% Modified-t UCL (Johnson-1978) | 6.974 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.289 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.77 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.342 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.222 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.844 | k star (bias corrected MLE) | 0.727 |
| Theta hat (MLE) | 4.241 | Theta star (bias corrected MLE) | 4.92 |
| nu hat (MLE) | 27 | nu star (bias corrected) | 23.27 |
| MLE Mean (bias corrected) | 3.578 | MLE Sd (bias corrected) | 4.196 |
| | | Approximate Chi Square Value (0.05) | 13.3 |
| Adjusted Level of Significance | 0.0335 | Adjusted Chi Square Value | 12.44 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 6.263 | 95% Adjusted Gamma UCL (use when n<50) | 6.692 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.786 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.887 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.246 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.222 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -0.342 | Mean of logged Data | 0.576 |
| Maximum of Logged Data | 3.388 | SD of logged Data | 0.956 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 5.392 | 90% Chebyshev (MVUE) UCL | 4.824 |
| 95% Chebyshev (MVUE) UCL | 5.784 | 97.5% Chebyshev (MVUE) UCL | 7.117 |
| 99% Chebyshev (MVUE) UCL | 9.735 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 6.507 | 95% Jackknife UCL | 6.7 |
| 95% Standard Bootstrap UCL | 6.404 | 95% Bootstrap-t UCL | 25.13 |
| 95% Hall's Bootstrap UCL | 18.15 | 95% Percentile Bootstrap UCL | 6.951 |
| 95% BCA Bootstrap UCL | 9.061 | | |
| 90% Chebyshev(Mean, Sd) UCL | 8.921 | 95% Chebyshev(Mean, Sd) UCL | 11.34 |
| 97.5% Chebyshev(Mean, Sd) UCL | 14.7 | 99% Chebyshev(Mean, Sd) UCL | 21.3 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 11.34 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

**MANGANESE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 16 | Number of Distinct Observations | 16 |
| | | Number of Missing Observations | 3 |
| Minimum | 0.0388 | Mean | 0.299 |
| Maximum | 2.51 | Median | 0.137 |
| SD | 0.596 | Std. Error of Mean | 0.149 |
| Coefficient of Variation | 1.991 | Skewness | 3.867 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.382 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.887 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.418 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.222 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 0.56 | 95% Adjusted-CLT UCL (Chen-1995) | 0.698 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.584 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.427 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.767 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.359 | **Kolmogrov-Smirnoff Gamma GOF Test** | |
| 5% K-S Critical Value | 0.222 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.91 | k star (bias corrected MLE) | 0.781 |
| Theta hat (MLE) | 0.329 | Theta star (bias corrected MLE) | 0.383 |
| nu hat (MLE) | 29.13 | nu star (bias corrected) | 25 |
| MLE Mean (bias corrected) | 0.299 | MLE Sd (bias corrected) | 0.338 |
| | | Approximate Chi Square Value (0.05) | 14.61 |
| Adjusted Level of Significance | 0.0335 | Adjusted Chi Square Value | 13.71 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 0.512 | 95% Adjusted Gamma UCL (use when n<50) | 0.545 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.795 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.887 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.274 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.222 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -3.249 | Mean of logged Data | -1.848 |
| Maximum of Logged Data | 0.92 | SD of logged Data | 0.932 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.455 | 90% Chebyshev (MVUE) UCL | 0.413 |
| 95% Chebyshev (MVUE) UCL | 0.494 | 97.5% Chebyshev (MVUE) UCL | 0.606 |
| 99% Chebyshev (MVUE) UCL | 0.827 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.544 | 95% Jackknife UCL | 0.56 |
| 95% Standard Bootstrap UCL | 0.534 | 95% Bootstrap-t UCL | 2.649 |
| 95% Hall's Bootstrap UCL | 1.965 | 95% Percentile Bootstrap UCL | 0.59 |
| 95% BCA Bootstrap UCL | 0.76 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.746 | 95% Chebyshev(Mean, Sd) UCL | 0.948 |
| 97.5% Chebyshev(Mean, Sd) UCL | 1.229 | 99% Chebyshev(Mean, Sd) UCL | 1.781 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 0.948 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

BENZO(A)ANTHRACENE

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 19 | Number of Distinct Observations | 11 |
| Number of Detects | 6 | Number of Non-Detects | 13 |
| Number of Distinct Detects | 6 | Number of Distinct Non-Detects | 5 |
| Minimum Detect | 7.75E-06 | Minimum Non-Detect | 9.40E-05 |
| Maximum Detect | 2.40E-04 | Maximum Non-Detect | 1.10E-04 |
| Variance Detects | 8.35E-09 | Percent Non-Detects | 68.42% |
| Mean Detects | 7.75E-05 | SD Detects | 9.14E-05 |
| Median Detects | 3.45E-05 | CV Detects | N/A |
| Skewness Detects | 1.443 | Kurtosis Detects | 1.321 |
| Mean of Logged Detects | -10.13 | SD of Logged Detects | 1.306 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.807 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.788 | Detected Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.285 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.362 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 4.07E-05 | Standard Error of Mean | 1.53E-05 |
| SD | 5.47E-05 | 95% KM (BCA) UCL | 7.05E-05 |
| 95% KM (t) UCL | 6.72E-05 | 95% KM (Percentile Bootstrap) UCL | 6.84E-05 |
| 95% KM (z) UCL | 6.59E-05 | 95% KM Bootstrap t UCL | 8.29E-05 |
| 90% KM Chebyshev UCL | 8.67E-05 | 95% KM Chebyshev UCL | 1.07E-04 |
| 97.5% KM Chebyshev UCL | 1.36E-04 | 99% KM Chebyshev UCL | 1.93E-04 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.343 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.718 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.256 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.342 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.888 | k star (bias corrected MLE) | 0.555 |
| Theta hat (MLE) | 8.72E-05 | Theta star (bias corrected MLE) | 1.40E-04 |

| | | | |
|---|---|---|---|
| nu hat (MLE) | 10.66 | nu star (bias corrected) | 6.662 |
| MLE Mean (bias corrected) | 7.75E-05 | MLE Sd (bias corrected) | 1.04E-04 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.553 | nu hat (KM) | 21 |
| Approximate Chi Square Value (21.00, α) | 11.59 | Adjusted Chi Square Value (21.00, β) | 10.98 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 7.37E-05 | 95% Gamma Adjusted KM-UCL (use when n<50) | 7.78E-05 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 7.75E-06 | Mean | 0.00687 |
| Maximum | 0.01 | Median | 0.01 |
| SD | 0.00474 | CV | 0.69 |
| k hat (MLE) | 0.469 | k star (bias corrected MLE) | 0.43 |
| Theta hat (MLE) | 0.0146 | Theta star (bias corrected MLE) | 0.016 |
| nu hat (MLE) | 17.83 | nu star (bias corrected) | 16.35 |
| MLE Mean (bias corrected) | 0.00687 | MLE Sd (bias corrected) | 0.0105 |
| | | Adjusted Level of Significance (β) | 0.0369 |
| Approximate Chi Square Value (16.35, α) | 8.208 | Adjusted Chi Square Value (16.35, β) | 7.707 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0137 | 95% Gamma Adjusted UCL (use when n<50) | 0.0146 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.95 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.788 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.216 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.362 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 4.02E-05 | Mean in Log Scale | -10.62 |
| SD in Original Scale | 5.59E-05 | SD in Log Scale | 0.928 |
| 95% t UCL (assumes normality of ROS data) | 6.25E-05 | 95% Percentile Bootstrap UCL | 6.38E-05 |
| 95% BCA Bootstrap UCL | 7.19E-05 | 95% Bootstrap t UCL | 1.14E-04 |
| 95% H-UCL (Log ROS) | 6.48E-05 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -10.63 | 95% H-UCL (KM -Log) | 6.46E-05 |
| KM SD (logged) | 0.931 | 95% Critical H Value (KM-Log) | 2.514 |
| KM Standard Error of Mean (logged) | 0.367 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 5.81E-05 | Mean in Log Scale | -9.987 |
| SD in Original Scale | 5.01E-05 | SD in Log Scale | 0.697 |
| 95% t UCL (Assumes normality) | 7.80E-05 | 95% H-Stat UCL | 8.45E-05 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 6.72E-05 | 95% KM (Percentile Bootstrap) UCL | 6.84E-05 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**BENZO(A)PYRENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 19 | Number of Distinct Observations | 13 |
| Number of Detects | 11 | Number of Non-Detects | 8 |
| Number of Distinct Detects | 10 | Number of Distinct Non-Detects | 5 |
| Minimum Detect | 3.55E-05 | Minimum Non-Detect | 1.50E-04 |
| Maximum Detect | 5.30E-04 | Maximum Non-Detect | 1.90E-04 |
| Variance Detects | 2.30E-08 | Percent Non-Detects | 42.11% |
| Mean Detects | 2.08E-04 | SD Detects | 1.52E-04 |
| Median Detects | 1.90E-04 | CV Detects | 0.729 |
| Skewness Detects | 0.884 | Kurtosis Detects | 0.776 |
| Mean of Logged Detects | -8.797 | SD of Logged Detects | 0.93 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.905 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.85 | Detected Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.196 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.267 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 1.42E-04 | Standard Error of Mean | 3.36E-05 |
| SD | 1.37E-04 | 95% KM (BCA) UCL | 2.06E-04 |
| 95% KM (t) UCL | 2.00E-04 | 95% KM (Percentile Bootstrap) UCL | 2.11E-04 |
| 95% KM (z) UCL | 1.97E-04 | 95% KM Bootstrap t UCL | 2.16E-04 |
| 90% KM Chebyshev UCL | 2.42E-04 | 95% KM Chebyshev UCL | 2.88E-04 |
| 97.5% KM Chebyshev UCL | 3.51E-04 | 99% KM Chebyshev UCL | 4.76E-04 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.515 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.741 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.2 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.259 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.714 | k star (bias corrected MLE) | 1.307 |
| Theta hat (MLE) | 1.21E-04 | Theta star (bias corrected MLE) | 1.59E-04 |
| nu hat (MLE) | 37.7 | nu star (bias corrected) | 28.75 |
| MLE Mean (bias corrected) | 2.08E-04 | MLE Sd (bias corrected) | 1.82E-04 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 1.073 | nu hat (KM) | 40.77 |
| Approximate Chi Square Value (40.77, α) | 27.14 | Adjusted Chi Square Value (40.77, β) | 26.17 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 2.13E-04 | 95% Gamma Adjusted KM-UCL (use when n<50) | 2.21E-04 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 3.55E-05 | Mean | 0.00433 |
| Maximum | 0.01 | Median | 3.90E-04 |
| SD | 0.00497 | CV | 1.147 |
| k hat (MLE) | 0.412 | k star (bias corrected MLE) | 0.382 |
| Theta hat (MLE) | 0.0105 | Theta star (bias corrected MLE) | 0.0113 |
| nu hat (MLE) | 15.65 | nu star (bias corrected) | 14.51 |
| MLE Mean (bias corrected) | 0.00433 | MLE Sd (bias corrected) | 0.00701 |
| | | Adjusted Level of Significance (β) | 0.0369 |
| Approximate Chi Square Value (14.51, α) | 6.925 | Adjusted Chi Square Value (14.51, β) | 6.47 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.00908 | 95% Gamma Adjusted UCL (use when n<50) | 0.00972 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.87 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.85 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.252 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.267 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 1.43E-04 | Mean in Log Scale | -9.252 |
| SD in Original Scale | 1.38E-04 | SD in Log Scale | 0.903 |
| 95% t UCL (assumes normality of ROS data) | 1.98E-04 | 95% Percentile Bootstrap UCL | 1.94E-04 |
| 95% BCA Bootstrap UCL | 2.07E-04 | 95% Bootstrap t UCL | 2.20E-04 |
| 95% H-UCL (Log ROS) | 2.45E-04 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -9.311 | 95% H-UCL (KM -Log) | 2.47E-04 |
| KM SD (logged) | 0.942 | 95% Critical H Value (KM-Log) | 2.53 |
| KM Standard Error of Mean (logged) | 0.241 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 1.57E-04 | Mean in Log Scale | -9.038 |

| | | | |
|---|---|---|---|
| SD in Original Scale | 1.29E-04 | SD in Log Scale | 0.753 |
| 95% t UCL (Assumes normality) | 2.08E-04 | 95% H-Stat UCL | 2.37E-04 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 2.00E-04 | 95% KM (Percentile Bootstrap) UCL | 2.11E-04 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**BENZO(B)FLUORANTHENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 19 | Number of Distinct Observations | 12 |
| Number of Detects | 6 | Number of Non-Detects | 13 |
| Number of Distinct Detects | 6 | Number of Distinct Non-Detects | 7 |
| Minimum Detect | 2.30E-05 | Minimum Non-Detect | 9.40E-05 |
| Maximum Detect | 4.80E-04 | Maximum Non-Detect | 0.0053 |
| Variance Detects | 3.47E-08 | Percent Non-Detects | 68.42% |
| Mean Detects | 1.58E-04 | SD Detects | 1.86E-04 |
| Median Detects | 6.85E-05 | CV Detects | 1.182 |
| Skewness Detects | 1.309 | Kurtosis Detects | 0.68 |
| Mean of Logged Detects | -9.449 | SD of Logged Detects | 1.332 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.799 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.788 | Detected Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.268 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.362 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 7.50E-05 | Standard Error of Mean | 3.35E-05 |
| SD | 1.22E-04 | 95% KM (BCA) UCL | 1.42E-04 |
| 95% KM (t) UCL | 1.33E-04 | 95% KM (Percentile Bootstrap) UCL | 1.36E-04 |
| 95% KM (z) UCL | 1.30E-04 | 95% KM Bootstrap t UCL | 3.20E-04 |
| 90% KM Chebyshev UCL | 1.75E-04 | 95% KM Chebyshev UCL | 2.21E-04 |
| 97.5% KM Chebyshev UCL | 2.84E-04 | 99% KM Chebyshev UCL | 4.08E-04 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.525 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.719 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.307 | **Kolmogrov-Smirnoff GOF** | |

| | | | |
|---|---|---|---|
| 5% K-S Critical Value | 0.342 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.849 | k star (bias corrected MLE) | 0.535 |
| Theta hat (MLE) | 1.86E-04 | Theta star (bias corrected MLE) | 2.94E-04 |
| nu hat (MLE) | 10.18 | nu star (bias corrected) | 6.425 |
| MLE Mean (bias corrected) | 1.58E-04 | MLE Sd (bias corrected) | 2.15E-04 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.376 | nu hat (KM) | 14.27 |
| Approximate Chi Square Value (14.27, α) | 6.757 | Adjusted Chi Square Value (14.27, β) | 6.309 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 1.58E-04 | 95% Gamma Adjusted KM-UCL (use when n<50) | 1.70E-04 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 2.30E-05 | Mean | 0.00689 |
| Maximum | 0.01 | Median | 0.01 |
| SD | 0.0047 | CV | 0.682 |
| k hat (MLE) | 0.542 | k star (bias corrected MLE) | 0.492 |
| Theta hat (MLE) | 0.0127 | Theta star (bias corrected MLE) | 0.014 |
| nu hat (MLE) | 20.6 | nu star (bias corrected) | 18.68 |
| MLE Mean (bias corrected) | 0.00689 | MLE Sd (bias corrected) | 0.00983 |
| | | Adjusted Level of Significance (β) | 0.0369 |
| Approximate Chi Square Value (18.68, α) | 9.883 | Adjusted Chi Square Value (18.68, β) | 9.326 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.013 | 95% Gamma Adjusted UCL (use when n<50) | 0.0138 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.848 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.788 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.289 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.362 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 7.35E-05 | Mean in Log Scale | -10.1 |
| SD in Original Scale | 1.15E-04 | SD in Log Scale | 0.952 |
| 95% t UCL (assumes normality of ROS data) | 1.19E-04 | 95% Percentile Bootstrap UCL | 1.22E-04 |
| 95% BCA Bootstrap UCL | 1.33E-04 | 95% Bootstrap t UCL | 2.60E-04 |
| 95% H-UCL (Log ROS) | 1.14E-04 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -10.16 | 95% H-UCL (KM -Log) | 1.03E-04 |
| KM SD (logged) | 0.928 | 95% Critical H Value (KM-Log) | 2.51 |
| KM Standard Error of Mean (logged) | 0.256 | | |

**DL/2 Statistics**

| DL/2 Normal | | DL/2 Log-Transformed | |
|---|---|---|---|
| Mean in Original Scale | 4.88E-04 | Mean in Log Scale | -9.155 |
| SD in Original Scale | 9.53E-04 | SD in Log Scale | 1.607 |
| 95% t UCL (Assumes normality) | 8.68E-04 | 95% H-Stat UCL | 0.00149 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 1.33E-04 | 95% KM (Percentile Bootstrap) UCL | 1.36E-04 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**BIS(2-ETHYLHEXYL) PHTHALATE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 19 | Number of Distinct Observations | 12 |
| Number of Detects | 6 | Number of Non-Detects | 13 |
| Number of Distinct Detects | 6 | Number of Distinct Non-Detects | 6 |
| Minimum Detect | 6.40E-04 | Minimum Non-Detect | 0.0047 |
| Maximum Detect | 0.0058 | Maximum Non-Detect | 0.0056 |
| Variance Detects | 4.00E-06 | Percent Non-Detects | 68.42% |
| Mean Detects | 0.00179 | SD Detects | 0.002 |
| Median Detects | 9.25E-04 | CV Detects | 1.117 |
| Skewness Detects | 2.276 | Kurtosis Detects | 5.271 |
| Mean of Logged Detects | -6.675 | SD of Logged Detects | 0.817 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.645 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.788 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.354 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.362 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Approximate Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 0.00124 | Standard Error of Mean | 3.19E-04 |
| SD | 0.00113 | 95% KM (BCA) UCL | 0.00184 |
| 95% KM (t) UCL | 0.00179 | 95% KM (Percentile Bootstrap) UCL | 0.00178 |
| 95% KM (z) UCL | 0.00177 | 95% KM Bootstrap t UCL | 0.00366 |
| 90% KM Chebyshev UCL | 0.0022 | 95% KM Chebyshev UCL | 0.00263 |
| 97.5% KM Chebyshev UCL | 0.00324 | 99% KM Chebyshev UCL | 0.00442 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.781 | **Anderson-Darling GOF Test** | |

| | | | |
|---|---|---|---|
| 5% A-D Critical Value | 0.707 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.322 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.337 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data follow Appr. Gamma Distribution at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.58 | k star (bias corrected MLE) | 0.901 |
| Theta hat (MLE) | 0.00113 | Theta star (bias corrected MLE) | 0.00199 |
| nu hat (MLE) | 18.96 | nu star (bias corrected) | 10.81 |
| MLE Mean (bias corrected) | 0.00179 | MLE Sd (bias corrected) | 0.00188 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 1.199 | nu hat (KM) | 45.56 |
| Approximate Chi Square Value (45.56, α) | 31.08 | Adjusted Chi Square Value (45.56, β) | 30.03 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.00182 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.00188 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 6.40E-04 | Mean | 0.00741 |
| Maximum | 0.01 | Median | 0.01 |
| SD | 0.00406 | CV | 0.548 |
| k hat (MLE) | 1.561 | k star (bias corrected MLE) | 1.349 |
| Theta hat (MLE) | 0.00475 | Theta star (bias corrected MLE) | 0.00549 |
| nu hat (MLE) | 59.3 | nu star (bias corrected) | 51.27 |
| MLE Mean (bias corrected) | 0.00741 | MLE Sd (bias corrected) | 0.00638 |
| | | Adjusted Level of Significance (β) | 0.0369 |
| Approximate Chi Square Value (51.27, α) | 35.83 | Adjusted Chi Square Value (51.27, β) | 34.7 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0106 | 95% Gamma Adjusted UCL (use when n<50) | 0.0109 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.82 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.788 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.284 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.362 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.00128 | Mean in Log Scale | -6.845 |
| SD in Original Scale | 0.00116 | SD in Log Scale | 0.546 |
| 95% t UCL (assumes normality of ROS data) | 0.00175 | 95% Percentile Bootstrap UCL | 0.00178 |
| 95% BCA Bootstrap UCL | 0.00204 | 95% Bootstrap t UCL | 0.00248 |
| 95% H-UCL (Log ROS) | 0.00161 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -6.883 | 95% H-UCL (KM -Log) | 0.0015 |

| | | | |
|---|---|---|---|
| KM SD (logged) | 0.52 | 95% Critical H Value (KM-Log) | 2.028 |
| KM Standard Error of Mean (logged) | 0.184 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.00226 | Mean in Log Scale | -6.217 |
| SD in Original Scale | 0.00111 | SD in Log Scale | 0.539 |
| 95% t UCL (Assumes normality) | 0.0027 | 95% H-Stat UCL | 0.00299 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.00179 | 95% KM (Percentile Bootstrap) UCL | 0.00178 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**DIBENZO(A,H)ANTHRACENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 19 | Number of Distinct Observations | 10 |
| Number of Detects | 3 | Number of Non-Detects | 16 |
| Number of Distinct Detects | 3 | Number of Distinct Non-Detects | 7 |
| Minimum Detect | 3.10E-05 | Minimum Non-Detect | 9.40E-05 |
| Maximum Detect | 1.00E-04 | Maximum Non-Detect | 0.0053 |
| Variance Detects | 1.21E-09 | Percent Non-Detects | 84.21% |
| Mean Detects | 6.27E-05 | SD Detects | 3.48E-05 |
| Median Detects | 5.70E-05 | CV Detects | N/A |
| Skewness Detects | 0.712 | Kurtosis Detects | N/A |
| Mean of Logged Detects | -9.788 | SD of Logged Detects | 0.586 |

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.98 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.767 | Detected Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.231 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.512 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 4.83E-05 | Standard Error of Mean | 1.16E-05 |
| SD | 1.95E-05 | 95% KM (BCA) UCL | N/A |

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 6.84E-05 | 95% KM (Percentile Bootstrap) UCL | N/A |
| 95% KM (z) UCL | 6.73E-05 | 95% KM Bootstrap t UCL | N/A |
| 90% KM Chebyshev UCL | 8.30E-05 | 95% KM Chebyshev UCL | 9.87E-05 |
| 97.5% KM Chebyshev UCL | 1.21E-04 | 99% KM Chebyshev UCL | 1.63E-04 |

**Gamma GOF Tests on Detected Observations Only**

Not Enough Data to Perform GOF Test

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 4.688 | k star (bias corrected MLE) | N/A |
| Theta hat (MLE) | 1.34E-05 | Theta star (bias corrected MLE) | N/A |
| nu hat (MLE) | 28.13 | nu star (bias corrected) | N/A |
| MLE Mean (bias corrected) | N/A | MLE Sd (bias corrected) | N/A |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 6.163 | nu hat (KM) | 234.2 |
| | | Adjusted Level of Significance (β) | 0.0369 |
| Approximate Chi Square Value (234.18, α) | 199.8 | Adjusted Chi Square Value (234.18, β) | 197 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 5.66E-05 | 95% Gamma Adjusted KM-UCL (use when n<50) | 5.74E-05 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.999 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.767 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.178 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.512 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 4.62E-05 | Mean in Log Scale | -10.04 |
| SD in Original Scale | 1.70E-05 | SD in Log Scale | 0.324 |
| 95% t UCL (assumes normality of ROS data) | 5.29E-05 | 95% Percentile Bootstrap UCL | 5.29E-05 |
| 95% BCA Bootstrap UCL | 5.52E-05 | 95% Bootstrap t UCL | 5.60E-05 |
| 95% H-UCL (Log ROS) | 5.32E-05 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -10.01 | 95% H-UCL (KM -Log) | 5.69E-05 |
| KM SD (logged) | 0.373 | 95% Critical H Value (KM-Log) | 1.899 |
| KM Standard Error of Mean (logged) | 0.256 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 4.57E-04 | Mean in Log Scale | -9.274 |
| SD in Original Scale | 9.61E-04 | SD in Log Scale | 1.495 |
| 95% t UCL (Assumes normality) | 8.39E-04 | 95% H-Stat UCL | 9.44E-04 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 6.84E-05 | 95% KM (Percentile Bootstrap) UCL | N/A |

**Warning: One or more Recommended UCL(s) not available!**

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**INDENO(1,2,3-CD)PYRENE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 19 | Number of Distinct Observations | 11 |
| Number of Detects | 6 | Number of Non-Detects | 13 |
| Number of Distinct Detects | 6 | Number of Distinct Non-Detects | 5 |
| Minimum Detect | 9.00E-06 | Minimum Non-Detect | 9.40E-05 |
| Maximum Detect | 2.70E-04 | Maximum Non-Detect | 1.10E-04 |
| Variance Detects | 1.14E-08 | Percent Non-Detects | 68.42% |
| Mean Detects | 9.92E-05 | SD Detects | 1.07E-04 |
| Median Detects | 5.05E-05 | CV Detects | N/A |
| Skewness Detects | 1.044 | Kurtosis Detects | -0.599 |
| Mean of Logged Detects | -9.835 | SD of Logged Detects | 1.304 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.837 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.788 | Detected Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.264 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.362 | Detected Data appear Normal at 5% Significance Level | |

**Detected Data appear Normal at 5% Significance Level**

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| Mean | 5.44E-05 | Standard Error of Mean | 1.94E-05 |
| SD | 6.56E-05 | 95% KM (BCA) UCL | 8.95E-05 |
| 95% KM (t) UCL | 8.80E-05 | 95% KM (Percentile Bootstrap) UCL | 8.95E-05 |
| 95% KM (z) UCL | 8.63E-05 | 95% KM Bootstrap t UCL | 1.04E-04 |
| 90% KM Chebyshev UCL | 1.13E-04 | 95% KM Chebyshev UCL | 1.39E-04 |
| 97.5% KM Chebyshev UCL | 1.75E-04 | 99% KM Chebyshev UCL | 2.47E-04 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.317 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.716 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.241 | **Kolmogrov-Smirnoff GOF** | |
| 5% K-S Critical Value | 0.341 | Detected data appear Gamma Distributed at 5% Significance Level | |

**Detected data appear Gamma Distributed at 5% Significance Level**

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.943 | k star (bias corrected MLE) | 0.583 |
| Theta hat (MLE) | 1.05E-04 | Theta star (bias corrected MLE) | 1.70E-04 |

| | | | |
|---|---|---|---|
| nu hat (MLE) | 11.32 | nu star (bias corrected) | 6.994 |
| MLE Mean (bias corrected) | 9.92E-05 | MLE Sd (bias corrected) | 1.30E-04 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| k hat (KM) | 0.688 | nu hat (KM) | 26.15 |
| Approximate Chi Square Value (26.15, α) | 15.49 | Adjusted Chi Square Value (26.15, β) | 14.78 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 9.18E-05 | 95% Gamma Adjusted KM-UCL (use when n<50) | 9.63E-05 |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 9.00E-06 | Mean | 0.00687 |
| Maximum | 0.01 | Median | 0.01 |
| SD | 0.00473 | CV | 0.688 |
| k hat (MLE) | 0.498 | k star (bias corrected MLE) | 0.454 |
| Theta hat (MLE) | 0.0138 | Theta star (bias corrected MLE) | 0.0151 |
| nu hat (MLE) | 18.92 | nu star (bias corrected) | 17.27 |
| MLE Mean (bias corrected) | 0.00687 | MLE Sd (bias corrected) | 0.0102 |
| | | Adjusted Level of Significance (β) | 0.0369 |
| Approximate Chi Square Value (17.27, α) | 8.863 | Adjusted Chi Square Value (17.27, β) | 8.339 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0134 | 95% Gamma Adjusted UCL (use when n<50) | 0.0142 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.949 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.788 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.191 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.362 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 5.24E-05 | Mean in Log Scale | -10.33 |
| SD in Original Scale | 6.67E-05 | SD in Log Scale | 0.927 |
| 95% t UCL (assumes normality of ROS data) | 7.89E-05 | 95% Percentile Bootstrap UCL | 7.86E-05 |
| 95% BCA Bootstrap UCL | 8.81E-05 | 95% Bootstrap t UCL | 1.32E-04 |
| 95% H-UCL (Log ROS) | 8.65E-05 | | |

**UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -10.33 | 95% H-UCL (KM -Log) | 9.37E-05 |
| KM SD (logged) | 0.967 | 95% Critical H Value (KM-Log) | 2.565 |
| KM Standard Error of Mean (logged) | 0.4 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 6.49E-05 | Mean in Log Scale | -9.895 |
| SD in Original Scale | 6.11E-05 | SD in Log Scale | 0.69 |
| 95% t UCL (Assumes normality) | 8.92E-05 | 95% H-Stat UCL | 9.17E-05 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

**Detected Data appear Normal Distributed at 5% Significance Level**

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 8.80E-05 | 95% KM (Percentile Bootstrap) UCL | 8.95E-05 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

# ProUCL Output for Fish Data

| Analyte | Exp Area | Matrix | Valid Obs | Rec. UCL | Method | Max | EPC=Max |
|---|---|---|---|---|---|---|---|
| Arsenic | KWL | Fish tissue | 46 | 0.10 | 95% KM Adjusted Gamma UCL | 0.23 | FALSE |
| Chromium | KWL | Fish tissue | 46 | 4.3 | 95% KM (Chebyshev) UCL | 15 | FALSE |
| Lead | KWL | Fish tissue | 46 | 0.16 | 95% Percentile Bootstrap UCL | 1.0 | FALSE |
| 4,4'-DDD | KWL | Fish tissue | 46 | 0.012 | 95% KM (Chebyshev) UCL | 0.042 | FALSE |
| 4,4'-DDE | KWL | Fish tissue | 46 | 0.015 | 90% Chebyshev (MVUE) UCL | 0.063 | FALSE |
| Aroclor-1254 | KWL | Fish tissue | 46 | 0.054 | 95% Chebyshev (Mean, Sd) UCL | 0.16 | FALSE |
| Aroclor-1260 | KWL | Fish tissue | 46 | 0.022 | 95% KM Adjusted Gamma UCL | 0.066 | FALSE |

ProUCL_output_fish.xlsx

## UCL Statistics for Data Sets with Non-Detects

| User Selected Options | |
|---|---|
| Date/Time of Computation | ProUCL 5.11/5/2018 11:06:17 AM |
| From File | ProUCL_fish.xlsx |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Number of Bootstrap Operations | 2000 |

### Arsenic

#### General Statistics

| | | | |
|---|---|---|---|
| Total Number of Observations | 46 | Number of Distinct Observations | 26 |
| Number of Detects | 30 | Number of Non-Detects | 16 |
| Number of Distinct Detects | 20 | Number of Distinct Non-Detects | 10 |
| Minimum Detect | 0.051 | Minimum Non-Detect | 0.048 |
| Maximum Detect | 0.23 | Maximum Non-Detect | 0.2 |
| Variance Detects | 0.00211 | Percent Non-Detects | 34.78% |
| Mean Detects | 0.0966 | SD Detects | 0.0459 |
| Median Detects | 0.0835 | CV Detects | 0.476 |
| Skewness Detects | 1.184 | Kurtosis Detects | 1.107 |
| Mean of Logged Detects | -2.435 | SD of Logged Detects | 0.439 |

#### Normal GOF Test on Detects Only

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.87 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.927 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.161 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.159 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

#### Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

| | | | |
|---|---|---|---|
| KM Mean | 0.0899 | KM Standard Error of Mean | 0.00716 |
| KM SD | 0.0426 | 95% KM (BCA) UCL | 0.102 |
| 95% KM (t) UCL | 0.102 | 95% KM (Percentile Bootstrap) UCL | 0.102 |
| 95% KM (z) UCL | 0.102 | 95% KM Bootstrap t UCL | 0.104 |
| 90% KM Chebyshev UCL | 0.111 | 95% KM Chebyshev UCL | 0.121 |
| 97.5% KM Chebyshev UCL | 0.135 | 99% KM Chebyshev UCL | 0.161 |

#### Gamma GOF Tests on Detected Observations Only

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.817 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.746 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.157 | **Kolmogorov-Smirnov GOF** | |
| 5% K-S Critical Value | 0.16 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data follow Appr. Gamma Distribution at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 5.3 | k star (bias corrected MLE) | 4.792 |
| Theta hat (MLE) | 0.0182 | Theta star (bias corrected MLE) | 0.0202 |
| nu hat (MLE) | 318 | nu star (bias corrected) | 287.5 |
| Mean (detects) | 0.0966 | | |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.0207 | Mean | 0.087 |
| Maximum | 0.23 | Median | 0.0787 |
| SD | 0.0424 | CV | 0.488 |
| k hat (MLE) | 4.538 | k star (bias corrected MLE) | 4.256 |
| Theta hat (MLE) | 0.0192 | Theta star (bias corrected MLE) | 0.0204 |
| nu hat (MLE) | 417.5 | nu star (bias corrected) | 391.6 |
| Adjusted Level of Significance (β) | 0.0448 | | |
| Approximate Chi Square Value (391.56, α) | 346.7 | Adjusted Chi Square Value (391.56, β) | 345.3 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0982 | 95% Gamma Adjusted UCL (use when n<50) | 0.0986 |

**Estimates of Gamma Parameters using KM Estimates**

| | | | |
|---|---|---|---|
| Mean (KM) | 0.0899 | SD (KM) | 0.0426 |
| Variance (KM) | 0.00182 | SE of Mean (KM) | 0.00716 |
| k hat (KM) | 4.451 | k star (KM) | 4.175 |
| nu hat (KM) | 409.5 | nu star (KM) | 384.1 |
| theta hat (KM) | 0.0202 | theta star (KM) | 0.0215 |
| 80% gamma percentile (KM) | 0.123 | 90% gamma percentile (KM) | 0.149 |
| 95% gamma percentile (KM) | 0.172 | 99% gamma percentile (KM) | 0.222 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (384.14, α) | 339.7 | Adjusted Chi Square Value (384.14, β) | 338.4 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.102 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.102 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.923 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.927 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.16 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.159 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.0872 | Mean in Log Scale | -2.534 |
| SD in Original Scale | 0.0412 | SD in Log Scale | 0.434 |
| 95% t UCL (assumes normality of ROS data) | 0.0974 | 95% Percentile Bootstrap UCL | 0.0978 |
| 95% BCA Bootstrap UCL | 0.0989 | 95% Bootstrap t UCL | 0.0987 |
| 95% H-UCL (Log ROS) | 0.0982 | | |

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -2.507 | KM Geo Mean | 0.0815 |
| KM SD (logged) | 0.431 | 95% Critical H Value (KM-Log) | 1.84 |
| KM Standard Error of Mean (logged) | 0.0742 | 95% H-UCL (KM -Log) | 0.101 |
| KM SD (logged) | 0.431 | 95% Critical H Value (KM-Log) | 1.84 |
| KM Standard Error of Mean (logged) | 0.0742 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.0903 | Mean in Log Scale | -2.507 |
| SD in Original Scale | 0.041 | SD in Log Scale | 0.473 |
| 95% t UCL (Assumes normality) | 0.1 | 95% H-Stat UCL | 0.104 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM Adjusted Gamma UCL | 0.102 | 95% GROS Adjusted Gamma UCL | 0.0986 |

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test

When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**Chromium**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 46 | Number of Distinct Observations | 37 |
| Number of Detects | 43 | Number of Non-Detects | 3 |
| Number of Distinct Detects | 35 | Number of Distinct Non-Detects | 3 |
| Minimum Detect | 0.094 | Minimum Non-Detect | 0.09 |
| Maximum Detect | 15 | Maximum Non-Detect | 0.4 |
| Variance Detects | 11.9 | Percent Non-Detects | 6.522% |
| Mean Detects | 2.285 | SD Detects | 3.449 |
| Median Detects | 1.1 | CV Detects | 1.51 |
| Skewness Detects | 2.523 | Kurtosis Detects | 6.457 |
| Mean of Logged Detects | -0.199 | SD of Logged Detects | 1.546 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.652 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.943 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.263 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.134 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| KM Mean | 2.143 | KM Standard Error of Mean | 0.498 |
| KM SD | 3.339 | 95% KM (BCA) UCL | 3.051 |
| 95% KM (t) UCL | 2.98 | 95% KM (Percentile Bootstrap) UCL | 3.032 |
| 95% KM (z) UCL | 2.963 | 95% KM Bootstrap t UCL | 3.366 |
| 90% KM Chebyshev UCL | 3.638 | 95% KM Chebyshev UCL | 4.315 |
| 97.5% KM Chebyshev UCL | 5.254 | 99% KM Chebyshev UCL | 7.1 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.279 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.804 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.17 | **Kolmogorov-Smirnov GOF** | |
| 5% K-S Critical Value | 0.142 | Detected Data Not Gamma Distributed at 5% Significance Level | |

**Detected Data Not Gamma Distributed at 5% Significance Level**

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.603 | k star (bias corrected MLE) | 0.576 |
| Theta hat (MLE) | 3.791 | Theta star (bias corrected MLE) | 3.966 |
| nu hat (MLE) | 51.82 | nu star (bias corrected) | 49.54 |
| Mean (detects) | 2.285 | | |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 2.136 |
| Maximum | 15 | Median | 0.81 |
| SD | 3.38 | CV | 1.582 |
| k hat (MLE) | 0.509 | k star (bias corrected MLE) | 0.49 |
| Theta hat (MLE) | 4.198 | Theta star (bias corrected MLE) | 4.358 |
| nu hat (MLE) | 46.81 | nu star (bias corrected) | 45.09 |
| Adjusted Level of Significance (β) | 0.0448 | | |
| Approximate Chi Square Value (45.09, α) | 30.69 | Adjusted Chi Square Value (45.09, β) | 30.3 |
| 95% Gamma Approximate UCL (use when n>=50) | 3.139 | 95% Gamma Adjusted UCL (use when n<50) | 3.179 |

**Estimates of Gamma Parameters using KM Estimates**

| | | | |
|---|---|---|---|
| Mean (KM) | 2.143 | SD (KM) | 3.339 |
| Variance (KM) | 11.15 | SE of Mean (KM) | 0.498 |
| k hat (KM) | 0.412 | k star (KM) | 0.4 |
| nu hat (KM) | 37.9 | nu star (KM) | 36.76 |
| theta hat (KM) | 5.202 | theta star (KM) | 5.363 |
| 80% gamma percentile (KM) | 3.459 | 90% gamma percentile (KM) | 6.055 |
| 95% gamma percentile (KM) | 8.908 | 99% gamma percentile (KM) | 16.08 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (36.76, α) | 23.88 | Adjusted Chi Square Value (36.76, β) | 23.55 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 3.299 | 95% Gamma Adjusted KM-UCL (use when n<50) | 3.346 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.917 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.943 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.141 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.134 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 2.14 | Mean in Log Scale | -0.39 |
| SD in Original Scale | 3.378 | SD in Log Scale | 1.685 |
| 95% t UCL (assumes normality of ROS data) | 2.977 | 95% Percentile Bootstrap UCL | 3.043 |
| 95% BCA Bootstrap UCL | 3.283 | 95% Bootstrap t UCL | 3.317 |
| 95% H-UCL (Log ROS) | 6.182 | | |

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -0.331 | KM Geo Mean | 0.719 |
| KM SD (logged) | 1.562 | 95% Critical H Value (KM-Log) | 2.994 |
| KM Standard Error of Mean (logged) | 0.233 | 95% H-UCL (KM -Log) | 4.887 |
| KM SD (logged) | 1.562 | 95% Critical H Value (KM-Log) | 2.994 |
| KM Standard Error of Mean (logged) | 0.233 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 2.142 | Mean in Log Scale | -0.354 |
| SD in Original Scale | 3.377 | SD in Log Scale | 1.618 |
| 95% t UCL (Assumes normality) | 2.978 | 95% H-Stat UCL | 5.442 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (Chebyshev) UCL | 4.315 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**Lead**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 46 | Number of Distinct Observations | 36 |
| Number of Detects | 24 | Number of Non-Detects | 22 |
| Number of Distinct Detects | 22 | Number of Distinct Non-Detects | 15 |
| Minimum Detect | 0.033 | Minimum Non-Detect | 0.034 |
| Maximum Detect | 1 | Maximum Non-Detect | 0.099 |
| Variance Detects | 0.0588 | Percent Non-Detects | 47.83% |

| | | | |
|---|---|---|---|
| Mean Detects | 0.171 | SD Detects | 0.243 |
| Median Detects | 0.0845 | CV Detects | 1.418 |
| Skewness Detects | 2.591 | Kurtosis Detects | 6.244 |
| Mean of Logged Detects | -2.312 | SD of Logged Detects | 0.94 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.573 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.916 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.377 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.177 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| KM Mean | 0.111 | KM Standard Error of Mean | 0.0276 |
| KM SD | 0.183 | 95% KM (BCA) UCL | 0.162 |
| 95% KM (t) UCL | 0.158 | 95% KM (Percentile Bootstrap) UCL | 0.159 |
| 95% KM (z) UCL | 0.157 | 95% KM Bootstrap t UCL | 0.209 |
| 90% KM Chebyshev UCL | 0.194 | 95% KM Chebyshev UCL | 0.232 |
| 97.5% KM Chebyshev UCL | 0.284 | 99% KM Chebyshev UCL | 0.386 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.083 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.771 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.248 | **Kolmogorov-Smirnov GOF** | |
| 5% K-S Critical Value | 0.183 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.051 | k star (bias corrected MLE) | 0.947 |
| Theta hat (MLE) | 0.163 | Theta star (bias corrected MLE) | 0.181 |
| nu hat (MLE) | 50.44 | nu star (bias corrected) | 45.47 |
| Mean (detects) | 0.171 | | |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 0.0967 |
| Maximum | 1 | Median | 0.04 |
| SD | 0.191 | CV | 1.971 |
| k hat (MLE) | 0.649 | k star (bias corrected MLE) | 0.621 |
| Theta hat (MLE) | 0.149 | Theta star (bias corrected MLE) | 0.156 |
| nu hat (MLE) | 59.68 | nu star (bias corrected) | 57.12 |
| Adjusted Level of Significance (β) | 0.0448 | | |
| Approximate Chi Square Value (57.12, α) | 40.75 | Adjusted Chi Square Value (57.12, β) | 40.3 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.136 | 95% Gamma Adjusted UCL (use when n<50) | 0.137 |

**Estimates of Gamma Parameters using KM Estimates**

| | | | |
|---|---|---|---|
| Mean (KM) | 0.111 | SD (KM) | 0.183 |
| Variance (KM) | 0.0334 | SE of Mean (KM) | 0.0276 |
| k hat (KM) | 0.37 | k star (KM) | 0.361 |
| nu hat (KM) | 34.06 | nu star (KM) | 33.17 |
| theta hat (KM) | 0.301 | theta star (KM) | 0.309 |
| 80% gamma percentile (KM) | 0.177 | 90% gamma percentile (KM) | 0.32 |
| 95% gamma percentile (KM) | 0.479 | 99% gamma percentile (KM) | 0.884 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (33.17, α) | 21 | Adjusted Chi Square Value (33.17, β) | 20.69 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.176 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.178 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.867 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.916 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.174 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.177 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Approximate Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.109 | Mean in Log Scale | -2.776 |
| SD in Original Scale | 0.186 | SD in Log Scale | 0.887 |
| 95% t UCL (assumes normality of ROS data) | 0.155 | 95% Percentile Bootstrap UCL | 0.156 |
| 95% BCA Bootstrap UCL | 0.173 | 95% Bootstrap t UCL | 0.195 |
| 95% H-UCL (Log ROS) | 0.124 | | |

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -2.7 | KM Geo Mean | 0.0672 |
| KM SD (logged) | 0.803 | 95% Critical H Value (KM-Log) | 2.13 |
| KM Standard Error of Mean (logged) | 0.127 | 95% H-UCL (KM -Log) | 0.12 |
| KM SD (logged) | 0.803 | 95% Critical H Value (KM-Log) | 2.13 |
| KM Standard Error of Mean (logged) | 0.127 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.109 | Mean in Log Scale | -2.745 |
| SD in Original Scale | 0.185 | SD in Log Scale | 0.844 |
| 95% t UCL (Assumes normality) | 0.155 | 95% H-Stat UCL | 0.12 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| KM H-UCL | 0.12 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**4,4'-DDD**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 46 | Number of Distinct Observations | 38 |
| Number of Detects | 43 | Number of Non-Detects | 3 |
| Number of Distinct Detects | 37 | Number of Distinct Non-Detects | 2 |
| Minimum Detect | 2.2000E-4 | Minimum Non-Detect | 3.1000E-4 |
| Maximum Detect | 0.042 | Maximum Non-Detect | 3.4000E-4 |
| Variance Detects | 1.0196E-4 | Percent Non-Detects | 6.522% |
| Mean Detects | 0.00595 | SD Detects | 0.0101 |
| Median Detects | 0.0014 | CV Detects | 1.696 |
| Skewness Detects | 2.487 | Kurtosis Detects | 5.579 |
| Mean of Logged Detects | -6.116 | SD of Logged Detects | 1.353 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.588 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.943 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.285 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.134 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| KM Mean | 0.00558 | KM Standard Error of Mean | 0.00145 |
| KM SD | 0.00975 | 95% KM (BCA) UCL | 0.00817 |
| 95% KM (t) UCL | 0.00802 | 95% KM (Percentile Bootstrap) UCL | 0.00801 |
| 95% KM (z) UCL | 0.00797 | 95% KM Bootstrap t UCL | 0.00909 |
| 90% KM Chebyshev UCL | 0.00995 | 95% KM Chebyshev UCL | 0.0119 |
| 97.5% KM Chebyshev UCL | 0.0147 | 99% KM Chebyshev UCL | 0.0201 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.728 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.802 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.236 | **Kolmogorov-Smirnov GOF** | |
| 5% K-S Critical Value | 0.141 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.619 | k star (bias corrected MLE) | 0.592 |
| Theta hat (MLE) | 0.00961 | Theta star (bias corrected MLE) | 0.0101 |
| nu hat (MLE) | 53.27 | nu star (bias corrected) | 50.88 |
| Mean (detects) | 0.00595 | | |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 2.2000E-4 | Mean | 0.00622 |
| Maximum | 0.042 | Median | 0.00155 |
| SD | 0.00981 | CV | 1.577 |
| k hat (MLE) | 0.651 | k star (bias corrected MLE) | 0.623 |
| Theta hat (MLE) | 0.00955 | Theta star (bias corrected MLE) | 0.00998 |
| nu hat (MLE) | 59.9 | nu star (bias corrected) | 57.33 |
| Adjusted Level of Significance (β) | 0.0448 | | |
| Approximate Chi Square Value (57.33, α) | 40.93 | Adjusted Chi Square Value (57.33, β) | 40.48 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.00871 | 95% Gamma Adjusted UCL (use when n<50) | 0.00881 |

**Estimates of Gamma Parameters using KM Estimates**

| | | | |
|---|---|---|---|
| Mean (KM) | 0.00558 | SD (KM) | 0.00975 |
| Variance (KM) | 9.5098E-5 | SE of Mean (KM) | 0.00145 |
| k hat (KM) | 0.327 | k star (KM) | 0.321 |
| nu hat (KM) | 30.13 | nu star (KM) | 29.5 |
| theta hat (KM) | 0.017 | theta star (KM) | 0.0174 |
| 80% gamma percentile (KM) | 0.00869 | 90% gamma percentile (KM) | 0.0163 |
| 95% gamma percentile (KM) | 0.025 | 99% gamma percentile (KM) | 0.0473 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (29.50, α) | 18.1 | Adjusted Chi Square Value (29.50, β) | 17.81 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.0091 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.00924 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.933 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.943 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.164 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.134 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.00557 | Mean in Log Scale | -6.303 |
| SD in Original Scale | 0.00986 | SD in Log Scale | 1.491 |
| 95% t UCL (assumes normality of ROS data) | 0.00802 | 95% Percentile Bootstrap UCL | 0.00803 |
| 95% BCA Bootstrap UCL | 0.00838 | 95% Bootstrap t UCL | 0.00909 |
| 95% H-UCL (Log ROS) | 0.0106 | | |

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -6.267 | KM Geo Mean | 0.0019 |
| KM SD (logged) | 1.412 | 95% Critical H Value (KM-Log) | 2.804 |
| KM Standard Error of Mean (logged) | 0.211 | 95% H-UCL (KM -Log) | 0.00928 |
| KM SD (logged) | 1.412 | 95% Critical H Value (KM-Log) | 2.804 |
| KM Standard Error of Mean (logged) | 0.211 | | |

**DL/2 Statistics**

| DL/2 Normal | | DL/2 Log-Transformed | |
|---|---|---|---|
| Mean in Original Scale | 0.00558 | Mean in Log Scale | -6.288 |
| SD in Original Scale | 0.00986 | SD in Log Scale | 1.462 |
| 95% t UCL (Assumes normality) | 0.00802 | 95% H-Stat UCL | 0.0101 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (Chebyshev) UCL | 0.0119 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**4,4'-DDE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 46 | Number of Distinct Observations | 36 |
| | | Number of Missing Observations | 0 |
| Minimum | 6.1000E-4 | Mean | 0.0102 |
| Maximum | 0.063 | Median | 0.0036 |
| SD | 0.0149 | Std. Error of Mean | 0.0022 |
| Coefficient of Variation | 1.47 | Skewness | 2.437 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.62 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.945 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.272 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.129 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| 95% Normal UCL | | 95% UCLs (Adjusted for Skewness) | |
|---|---|---|---|
| 95% Student's-t UCL | 0.0138 | 95% Adjusted-CLT UCL (Chen-1995) | 0.0146 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.014 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.157 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.787 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.187 | **Kolmogorov-Smirnov Gamma GOF Test** | |
| 5% K-S Critical Value | 0.135 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.815 | k star (bias corrected MLE) | 0.776 |
| Theta hat (MLE) | 0.0125 | Theta star (bias corrected MLE) | 0.0131 |
| nu hat (MLE) | 74.96 | nu star (bias corrected) | 71.41 |
| MLE Mean (bias corrected) | 0.0102 | MLE Sd (bias corrected) | 0.0115 |
| | | Approximate Chi Square Value (0.05) | 52.95 |
| Adjusted Level of Significance | 0.0448 | Adjusted Chi Square Value | 52.44 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 0.0137 | 95% Adjusted Gamma UCL (use when n<50) | 0.0138 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.949 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.945 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.127 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.129 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -7.402 | Mean of logged Data | -5.317 |
| Maximum of Logged Data | -2.765 | SD of logged Data | 1.161 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.0149 | 90% Chebyshev (MVUE) UCL | 0.0153 |
| 95% Chebyshev (MVUE) UCL | 0.018 | 97.5% Chebyshev (MVUE) UCL | 0.0217 |
| 99% Chebyshev (MVUE) UCL | 0.0289 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.0138 | 95% Jackknife UCL | 0.0138 |
| 95% Standard Bootstrap UCL | 0.0138 | 95% Bootstrap-t UCL | 0.0154 |
| 95% Hall's Bootstrap UCL | 0.0143 | 95% Percentile Bootstrap UCL | 0.014 |
| 95% BCA Bootstrap UCL | 0.0145 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.0168 | 95% Chebyshev(Mean, Sd) UCL | 0.0197 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.0239 | 99% Chebyshev(Mean, Sd) UCL | 0.0321 |

**Suggested UCL to Use**

95% H-UCL 0.0149

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ProUCL computes and outputs H-statistic based UCLs for historical reasons only.
H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.
It is therefore recommended to avoid the use of H-statistic based 95% UCLs.
Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.

Aroclor-1254

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 46 | Number of Distinct Observations | 40 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.0029 | Mean | 0.0283 |
| Maximum | 0.16 | Median | 0.0107 |
| SD | 0.0392 | Std. Error of Mean | 0.00578 |
| Coefficient of Variation | 1.385 | Skewness | 2.161 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.637 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.945 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.296 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.129 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 0.038 | 95% Adjusted-CLT UCL (Chen-1995) | 0.0398 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.0383 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 2.925 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.783 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.193 | **Kolmogorov-Smirnov Gamma GOF Test** | |
| 5% K-S Critical Value | 0.135 | Data Not Gamma Distributed at 5% Significance Level | |

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.894 | k star (bias corrected MLE) | 0.85 |
| Theta hat (MLE) | 0.0317 | Theta star (bias corrected MLE) | 0.0333 |
| nu hat (MLE) | 82.23 | nu star (bias corrected) | 78.2 |
| MLE Mean (bias corrected) | 0.0283 | MLE Sd (bias corrected) | 0.0307 |
| | | Approximate Chi Square Value (0.05) | 58.83 |
| Adjusted Level of Significance | 0.0448 | Adjusted Chi Square Value | 58.28 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 0.0376 | 95% Adjusted Gamma UCL (use when n<50) | 0.038 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.909 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.945 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.162 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.129 | Data Not Lognormal at 5% Significance Level | |

Data Not Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -5.843 | Mean of logged Data | -4.219 |
| Maximum of Logged Data | -1.833 | SD of logged Data | 1.076 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.0386 | 90% Chebyshev (MVUE) UCL | 0.0404 |
| 95% Chebyshev (MVUE) UCL | 0.047 | 97.5% Chebyshev (MVUE) UCL | 0.0562 |
| 99% Chebyshev (MVUE) UCL | 0.0743 | | |

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution (0.05)

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.0378 | 95% Jackknife UCL | 0.038 |
| 95% Standard Bootstrap UCL | 0.0378 | 95% Bootstrap-t UCL | 0.0412 |
| 95% Hall's Bootstrap UCL | 0.0395 | 95% Percentile Bootstrap UCL | 0.0383 |
| 95% BCA Bootstrap UCL | 0.0398 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.0457 | 95% Chebyshev(Mean, Sd) UCL | 0.0535 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.0644 | 99% Chebyshev(Mean, Sd) UCL | 0.0858 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 0.0535 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**Aroclor-1260**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 46 | Number of Distinct Observations | 38 |
| Number of Detects | 44 | Number of Non-Detects | 2 |
| Number of Distinct Detects | 37 | Number of Distinct Non-Detects | 1 |
| Minimum Detect | 0.0023 | Minimum Non-Detect | 0.0031 |
| Maximum Detect | 0.066 | Maximum Non-Detect | 0.0031 |
| Variance Detects | 2.8789E-4 | Percent Non-Detects | 4.348% |
| Mean Detects | 0.0177 | SD Detects | 0.017 |
| Median Detects | 0.011 | CV Detects | 0.959 |
| Skewness Detects | 1.484 | Kurtosis Detects | 1.433 |
| Mean of Logged Detects | -4.461 | SD of Logged Detects | 0.953 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.799 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.944 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.222 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.132 | Detected Data Not Normal at 5% Significance Level | |

**Detected Data Not Normal at 5% Significance Level**

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| KM Mean | 0.017 | KM Standard Error of Mean | 0.00249 |
| KM SD | 0.0167 | 95% KM (BCA) UCL | 0.0212 |
| 95% KM (t) UCL | 0.0212 | 95% KM (Percentile Bootstrap) UCL | 0.0214 |
| 95% KM (z) UCL | 0.0211 | 95% KM Bootstrap t UCL | 0.0221 |
| 90% KM Chebyshev UCL | 0.0245 | 95% KM Chebyshev UCL | 0.0279 |
| 97.5% KM Chebyshev UCL | 0.0326 | 99% KM Chebyshev UCL | 0.0418 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.742 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.771 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.12 | **Kolmogorov-Smirnov GOF** | |
| 5% K-S Critical Value | 0.136 | Detected data appear Gamma Distributed at 5% Significance Level | |

**Detected data appear Gamma Distributed at 5% Significance Level**

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.315 | k star (bias corrected MLE) | 1.241 |
| Theta hat (MLE) | 0.0134 | Theta star (bias corrected MLE) | 0.0143 |
| nu hat (MLE) | 115.8 | nu star (bias corrected) | 109.2 |
| Mean (detects) | 0.0177 | | |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.0023 | Mean | 0.0174 |
| Maximum | 0.066 | Median | 0.011 |
| SD | 0.0167 | CV | 0.96 |
| k hat (MLE) | 1.353 | k star (bias corrected MLE) | 1.279 |
| Theta hat (MLE) | 0.0128 | Theta star (bias corrected MLE) | 0.0136 |
| nu hat (MLE) | 124.4 | nu star (bias corrected) | 117.7 |
| Adjusted Level of Significance (β) | 0.0448 | | |
| Approximate Chi Square Value (117.65, α) | 93.61 | Adjusted Chi Square Value (117.65, β) | 92.91 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0218 | 95% Gamma Adjusted UCL (use when n<50) | 0.022 |

**Estimates of Gamma Parameters using KM Estimates**

| | | | |
|---|---|---|---|
| Mean (KM) | 0.017 | SD (KM) | 0.0167 |
| Variance (KM) | 2.7864E-4 | SE of Mean (KM) | 0.00249 |
| k hat (KM) | 1.041 | k star (KM) | 0.988 |
| nu hat (KM) | 95.8 | nu star (KM) | 90.89 |

| | | | |
|---|---|---|---|
| theta hat (KM) | 0.0164 | theta star (KM) | 0.0172 |
| 80% gamma percentile (KM) | 0.0274 | 90% gamma percentile (KM) | 0.0393 |
| 95% gamma percentile (KM) | 0.0512 | 99% gamma percentile (KM) | 0.0789 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (90.89, α) | 69.91 | Adjusted Chi Square Value (90.89, β) | 69.31 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.0221 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.0223 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.956 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.944 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.0775 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.132 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.017 | Mean in Log Scale | -4.529 |
| SD in Original Scale | 0.0169 | SD in Log Scale | 0.987 |
| 95% t UCL (assumes normality of ROS data) | 0.0212 | 95% Percentile Bootstrap UCL | 0.0211 |
| 95% BCA Bootstrap UCL | 0.0216 | 95% Bootstrap t UCL | 0.0221 |
| 95% H-UCL (Log ROS) | 0.0247 | | |

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -4.526 | KM Geo Mean | 0.0108 |
| KM SD (logged) | 0.972 | 95% Critical H Value (KM-Log) | 2.297 |
| KM Standard Error of Mean (logged) | 0.145 | 95% H-UCL (KM -Log) | 0.0242 |
| KM SD (logged) | 0.972 | 95% Critical H Value (KM-Log) | 2.297 |
| KM Standard Error of Mean (logged) | 0.145 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.017 | Mean in Log Scale | -4.548 |
| SD in Original Scale | 0.0169 | SD in Log Scale | 1.019 |
| 95% t UCL (Assumes normality) | 0.0212 | 95% H-Stat UCL | 0.0254 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Gamma Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM Adjusted Gamma UCL | 0.0223 | 95% GROS Adjusted Gamma UCL | 0.022 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

# ProUCL Output for Fish Data by Species and Guild

| Analyte | Valid Obs | Rec. UCL | Method | Max | UCL>Max |
|---|---|---|---|---|---|
| ARSENIC | 19 | 0.12 | 95% KM (t) UCL | 0.23 | |
| CHROMIUM | 19 | 5.0 | Gamma Adjusted KM-UCL (use when k<=1 and 15 < n < 50 but k<=1) | 15 | |
| LEAD | 19 | 0.25 | 95% KM (Chebyshev) UCL | 0.72 | |
| 4,4'-DDD | 19 | 0.0046 | 95% KM Adjusted Gamma UCL | 0.0089 | |
| 4,4'-DDE | 19 | 0.0093 | 95% Adjusted Gamma UCL | 0.016 | |
| AROCLOR-1254 | 19 | 0.023 | 95% Student's-t UCL | 0.054 | |
| AROCLOR-1260 | 19 | 0.021 | 95% Student's-t UCL | 0.043 | |

BrownBullhead_output.xlsx

## UCL Statistics for Data Sets with Non-Detects

| User Selected Options | |
|---|---|
| Date/Time of Computation | ProUCL 5.17/17/2018 16:17:49 |
| From File | ProUCL_Fish_b.xls |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Number of Bootstrap Operations | 2000 |

## ARSENIC

### General Statistics

| | | | |
|---|---|---|---|
| Total Number of Observations | 19 | Number of Distinct Observations | 14 |
| Number of Detects | 11 | Number of Non-Detects | 8 |
| Number of Distinct Detects | 10 | Number of Distinct Non-Detects | 5 |
| Minimum Detect | 0.051 | Minimum Non-Detect | 0.16 |
| Maximum Detect | 0.23 | Maximum Non-Detect | 0.2 |
| Variance Detects | 0.00345 | Percent Non-Detects | 42.11% |
| Mean Detects | 0.0992 | SD Detects | 0.0587 |
| Median Detects | 0.076 | CV Detects | 0.592 |
| Skewness Detects | 1.254 | Kurtosis Detects | 0.96 |
| Mean of Logged Detects | -2.45 | SD of Logged Detects | 0.537 |

### Normal GOF Test on Detects Only

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.82 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.85 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.225 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.251 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Approximate Normal at 5% Significance Level

### Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

| | | | |
|---|---|---|---|
| KM Mean | 0.0924 | KM Standard Error of Mean | 0.0142 |
| KM SD | 0.0496 | 95% KM (BCA) UCL | 0.117 |
| 95% KM (t) UCL | 0.117 | 95% KM (Percentile Bootstrap) UCL | 0.115 |
| 95% KM (z) UCL | 0.116 | 95% KM Bootstrap t UCL | 0.126 |
| 90% KM Chebyshev UCL | 0.135 | 95% KM Chebyshev UCL | 0.154 |
| 97.5% KM Chebyshev UCL | 0.181 | 99% KM Chebyshev UCL | 0.234 |

### Gamma GOF Tests on Detected Observations Only

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.717 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.733 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.243 | **Kolmogorov-Smirnov GOF** | |
| 5% K-S Critical Value | 0.257 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 3.739 | k star (bias corrected MLE) | 2.78 |
| Theta hat (MLE) | 0.0265 | Theta star (bias corrected MLE) | 0.0357 |
| nu hat (MLE) | 82.25 | nu star (bias corrected) | 61.15 |
| Mean (detects) | 0.0992 | | |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.051 | Mean | 0.0913 |
| Maximum | 0.23 | Median | 0.0809 |
| SD | 0.0462 | CV | 0.506 |
| k hat (MLE) | 5.369 | k star (bias corrected MLE) | 4.556 |
| Theta hat (MLE) | 0.017 | Theta star (bias corrected MLE) | 0.02 |
| nu hat (MLE) | 204 | nu star (bias corrected) | 173.1 |
| Adjusted Level of Significance (β) | 0.0369 | | |
| Approximate Chi Square Value (173.14, α) | 143.7 | Adjusted Chi Square Value (173.14, β) | 141.4 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.11 | 95% Gamma Adjusted UCL (use when n<50) | 0.112 |

**Estimates of Gamma Parameters using KM Estimates**

| | | | |
|---|---|---|---|
| Mean (KM) | 0.0924 | SD (KM) | 0.0496 |
| Variance (KM) | 0.00246 | SE of Mean (KM) | 0.0142 |
| k hat (KM) | 3.465 | k star (KM) | 2.953 |
| nu hat (KM) | 131.7 | nu star (KM) | 112.2 |
| theta hat (KM) | 0.0267 | theta star (KM) | 0.0313 |
| 80% gamma percentile (KM) | 0.132 | 90% gamma percentile (KM) | 0.164 |
| 95% gamma percentile (KM) | 0.195 | 99% gamma percentile (KM) | 0.26 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (112.20, α) | 88.75 | Adjusted Chi Square Value (112.20, β) | 86.93 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.117 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.119 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.866 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.85 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.234 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.251 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.0903 | Mean in Log Scale | -2.499 |
| SD in Original Scale | 0.046 | SD in Log Scale | 0.423 |
| 95% t UCL (assumes normality of ROS data) | 0.109 | 95% Percentile Bootstrap UCL | 0.108 |
| 95% BCA Bootstrap UCL | 0.113 | 95% Bootstrap t UCL | 0.119 |
| 95% H-UCL (Log ROS) | 0.109 | | |

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -2.504 | KM Geo Mean | 0.0817 |
| KM SD (logged) | 0.476 | 95% Critical H Value (KM-Log) | 1.987 |
| KM Standard Error of Mean (logged) | 0.143 | 95% H-UCL (KM -Log) | 0.114 |
| KM SD (logged) | 0.476 | 95% Critical H Value (KM-Log) | 1.987 |
| KM Standard Error of Mean (logged) | 0.143 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.0945 | Mean in Log Scale | -2.443 |
| SD in Original Scale | 0.0443 | SD in Log Scale | 0.404 |
| 95% t UCL (Assumes normality) | 0.112 | 95% H-Stat UCL | 0.113 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (t) UCL | 0.117 |

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test

When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**CHROMIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 19 | Number of Distinct Observations | 17 |
| Number of Detects | 18 | Number of Non-Detects | 1 |
| Number of Distinct Detects | 16 | Number of Distinct Non-Detects | 1 |
| Minimum Detect | 0.094 | Minimum Non-Detect | 0.4 |
| Maximum Detect | 15 | Maximum Non-Detect | 0.4 |
| Variance Detects | 13.12 | Percent Non-Detects | 5.263% |
| Mean Detects | 2.483 | SD Detects | 3.622 |
| Median Detects | 1.5 | CV Detects | 1.459 |
| Skewness Detects | 2.715 | Kurtosis Detects | 8.623 |
| Mean of Logged Detects | -0.188 | SD of Logged Detects | 1.743 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.669 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.897 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.255 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.202 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| KM Mean | 2.358 | KM Standard Error of Mean | 0.818 |
| KM SD | 3.467 | 95% KM (BCA) UCL | 3.866 |
| 95% KM (t) UCL | 3.778 | 95% KM (Percentile Bootstrap) UCL | 3.885 |
| 95% KM (z) UCL | 3.705 | 95% KM Bootstrap t UCL | 5.254 |
| 90% KM Chebyshev UCL | 4.814 | 95% KM Chebyshev UCL | 5.926 |
| 97.5% KM Chebyshev UCL | 7.47 | 99% KM Chebyshev UCL | 10.5 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.793 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.794 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.225 | **Kolmogorov-Smirnov GOF** | |
| 5% K-S Critical Value | 0.214 | Detected Data Not Gamma Distributed at 5% Significance Level | |

**Detected data follow Appr. Gamma Distribution at 5% Significance Level**

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.568 | k star (bias corrected MLE) | 0.51 |
| Theta hat (MLE) | 4.375 | Theta star (bias corrected MLE) | 4.868 |
| nu hat (MLE) | 20.43 | nu star (bias corrected) | 18.36 |
| Mean (detects) | 2.483 | | |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 2.353 |
| Maximum | 15 | Median | 1.2 |
| SD | 3.566 | CV | 1.516 |
| k hat (MLE) | 0.498 | k star (bias corrected MLE) | 0.454 |
| Theta hat (MLE) | 4.725 | Theta star (bias corrected MLE) | 5.177 |
| nu hat (MLE) | 18.92 | nu star (bias corrected) | 17.27 |
| Adjusted Level of Significance (β) | 0.0369 | | |
| Approximate Chi Square Value (17.27, α) | 8.865 | Adjusted Chi Square Value (17.27, β) | 8.341 |
| 95% Gamma Approximate UCL (use when n>=50) | 4.583 | 95% Gamma Adjusted UCL (use when n<50) | 4.871 |

**Estimates of Gamma Parameters using KM Estimates**

| | | | |
|---|---|---|---|
| Mean (KM) | 2.358 | SD (KM) | 3.467 |
| Variance (KM) | 12.02 | SE of Mean (KM) | 0.818 |
| k hat (KM) | 0.463 | k star (KM) | 0.425 |
| nu hat (KM) | 17.58 | nu star (KM) | 16.14 |
| theta hat (KM) | 5.097 | theta star (KM) | 5.553 |
| 80% gamma percentile (KM) | 3.83 | 90% gamma percentile (KM) | 6.589 |
| 95% gamma percentile (KM) | 9.597 | 99% gamma percentile (KM) | 17.11 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (16.14, α) | 8.06 | Adjusted Chi Square Value (16.14, β) | 7.564 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 4.722 | 95% Gamma Adjusted KM-UCL (use when n<50) | 5.032 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.86 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.897 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.225 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.202 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 2.361 | Mean in Log Scale | -0.27 |
| SD in Original Scale | 3.56 | SD in Log Scale | 1.732 |
| 95% t UCL (assumes normality of ROS data) | 3.778 | 95% Percentile Bootstrap UCL | 3.782 |
| 95% BCA Bootstrap UCL | 4.421 | 95% Bootstrap t UCL | 5.373 |
| 95% H-UCL (Log ROS) | 15.99 | | |

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -0.293 | KM Geo Mean | 0.746 |
| KM SD (logged) | 1.709 | 95% Critical H Value (KM-Log) | 3.741 |
| KM Standard Error of Mean (logged) | 0.403 | 95% H-UCL (KM -Log) | 14.49 |
| KM SD (logged) | 1.709 | 95% Critical H Value (KM-Log) | 3.741 |
| KM Standard Error of Mean (logged) | 0.403 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 2.363 | Mean in Log Scale | -0.263 |
| SD in Original Scale | 3.559 | SD in Log Scale | 1.725 |
| 95% t UCL (Assumes normality) | 3.779 | 95% H-Stat UCL | 15.77 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| Gamma Adjusted KM-UCL (use when k<=1 and 15 < n < 50 b | 5.032 |

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test

When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 19 | Number of Distinct Observations | 17 |
| Number of Detects | 7 | Number of Non-Detects | 12 |
| Number of Distinct Detects | 7 | Number of Distinct Non-Detects | 10 |
| Minimum Detect | 0.033 | Minimum Non-Detect | 0.082 |
| Maximum Detect | 0.72 | Maximum Non-Detect | 0.099 |
| Variance Detects | 0.0636 | Percent Non-Detects | 63.16% |
| Mean Detects | 0.157 | SD Detects | 0.252 |
| Median Detects | 0.052 | CV Detects | 1.606 |
| Skewness Detects | 2.492 | Kurtosis Detects | 6.304 |
| Mean of Logged Detects | -2.554 | SD of Logged Detects | 1.108 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.57 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.803 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.374 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.304 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| KM Mean | 0.0855 | KM Standard Error of Mean | 0.0378 |
| KM SD | 0.152 | 95% KM (BCA) UCL | 0.153 |
| 95% KM (t) UCL | 0.151 | 95% KM (Percentile Bootstrap) UCL | 0.153 |
| 95% KM (z) UCL | 0.148 | 95% KM Bootstrap t UCL | 0.608 |
| 90% KM Chebyshev UCL | 0.199 | 95% KM Chebyshev UCL | 0.25 |
| 97.5% KM Chebyshev UCL | 0.321 | 99% KM Chebyshev UCL | 0.461 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.094 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.733 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.39 | **Kolmogorov-Smirnov GOF** | |
| 5% K-S Critical Value | 0.322 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.839 | k star (bias corrected MLE) | 0.575 |
| Theta hat (MLE) | 0.187 | Theta star (bias corrected MLE) | 0.273 |
| nu hat (MLE) | 11.75 | nu star (bias corrected) | 8.048 |
| Mean (detects) | 0.157 | | |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 0.0777 |
| Maximum | 0.72 | Median | 0.0254 |
| SD | 0.159 | CV | 2.049 |
| k hat (MLE) | 0.856 | k star (bias corrected MLE) | 0.756 |
| Theta hat (MLE) | 0.0908 | Theta star (bias corrected MLE) | 0.103 |
| nu hat (MLE) | 32.52 | nu star (bias corrected) | 28.72 |
| Adjusted Level of Significance (β) | 0.0369 | | |
| Approximate Chi Square Value (28.72, α) | 17.49 | Adjusted Chi Square Value (28.72, β) | 16.72 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.128 | 95% Gamma Adjusted UCL (use when n<50) | 0.133 |

**Estimates of Gamma Parameters using KM Estimates**

| | | | |
|---|---|---|---|
| Mean (KM) | 0.0855 | SD (KM) | 0.152 |
| Variance (KM) | 0.0231 | SE of Mean (KM) | 0.0378 |
| k hat (KM) | 0.317 | k star (KM) | 0.302 |
| nu hat (KM) | 12.03 | nu star (KM) | 11.47 |
| theta hat (KM) | 0.27 | theta star (KM) | 0.283 |
| 80% gamma percentile (KM) | 0.131 | 90% gamma percentile (KM) | 0.252 |
| 95% gamma percentile (KM) | 0.39 | 99% gamma percentile (KM) | 0.75 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (11.47, α) | 4.878 | Adjusted Chi Square Value (11.47, β) | 4.507 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.201 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.218 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.767 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.803 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.35 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.304 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.0894 | Mean in Log Scale | -2.846 |
| SD in Original Scale | 0.155 | SD in Log Scale | 0.701 |
| 95% t UCL (assumes normality of ROS data) | 0.151 | 95% Percentile Bootstrap UCL | 0.159 |
| 95% BCA Bootstrap UCL | 0.224 | 95% Bootstrap t UCL | 0.737 |
| 95% H-UCL (Log ROS) | 0.107 | | |

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -2.926 | KM Geo Mean | 0.0536 |
| KM SD (logged) | 0.699 | 95% Critical H Value (KM-Log) | 2.22 |
| KM Standard Error of Mean (logged) | 0.185 | 95% H-UCL (KM -Log) | 0.0986 |
| KM SD (logged) | 0.699 | 95% Critical H Value (KM-Log) | 2.22 |
| KM Standard Error of Mean (logged) | 0.185 | | |

**DL/2 Statistics**

| DL/2 Normal | | DL/2 Log-Transformed | |
|---|---|---|---|
| Mean in Original Scale | 0.0861 | Mean in Log Scale | -2.904 |
| SD in Original Scale | 0.156 | SD in Log Scale | 0.698 |
| 95% t UCL (Assumes normality) | 0.148 | 95% H-Stat UCL | 0.101 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (Chebyshev) UCL | 0.25 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**4,4'-DDD**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 19 | Number of Distinct Observations | 18 |
| Number of Detects | 17 | Number of Non-Detects | 2 |
| Number of Distinct Detects | 17 | Number of Distinct Non-Detects | 1 |
| Minimum Detect | 4.6000E-4 | Minimum Non-Detect | 3.1000E-4 |
| Maximum Detect | 0.0089 | Maximum Non-Detect | 3.1000E-4 |
| Variance Detects | 7.5341E-6 | Percent Non-Detects | 10.53% |
| Mean Detects | 0.00322 | SD Detects | 0.00274 |
| Median Detects | 0.0018 | CV Detects | 0.852 |
| Skewness Detects | 1.023 | Kurtosis Detects | -0.354 |
| Mean of Logged Detects | -6.091 | SD of Logged Detects | 0.886 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.834 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.892 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.227 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.207 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| KM Mean | 0.00291 | KM Standard Error of Mean | 6.3197E-4 |
| KM SD | 0.00267 | 95% KM (BCA) UCL | 0.00409 |
| 95% KM (t) UCL | 0.00401 | 95% KM (Percentile Bootstrap) UCL | 0.00395 |
| 95% KM (z) UCL | 0.00395 | 95% KM Bootstrap t UCL | 0.00434 |
| 90% KM Chebyshev UCL | 0.00481 | 95% KM Chebyshev UCL | 0.00567 |
| 97.5% KM Chebyshev UCL | 0.00686 | 99% KM Chebyshev UCL | 0.0092 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.544 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.755 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.179 | **Kolmogorov-Smirnov GOF** | |
| 5% K-S Critical Value | 0.213 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.562 | k star (bias corrected MLE) | 1.326 |
| Theta hat (MLE) | 0.00206 | Theta star (bias corrected MLE) | 0.00243 |
| nu hat (MLE) | 53.11 | nu star (bias corrected) | 45.07 |
| Mean (detects) | 0.00322 | | |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 4.6000E-4 | Mean | 0.00393 |
| Maximum | 0.01 | Median | 0.0024 |
| SD | 0.00336 | CV | 0.853 |
| k hat (MLE) | 1.403 | k star (bias corrected MLE) | 1.217 |
| Theta hat (MLE) | 0.0028 | Theta star (bias corrected MLE) | 0.00323 |
| nu hat (MLE) | 53.33 | nu star (bias corrected) | 46.24 |
| Adjusted Level of Significance (β) | 0.0369 | | |
| Approximate Chi Square Value (46.24, α) | 31.64 | Adjusted Chi Square Value (46.24, β) | 30.59 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.00575 | 95% Gamma Adjusted UCL (use when n<50) | 0.00595 |

**Estimates of Gamma Parameters using KM Estimates**

| | | | |
|---|---|---|---|
| Mean (KM) | 0.00291 | SD (KM) | 0.00267 |
| Variance (KM) | 7.1420E-6 | SE of Mean (KM) | 6.3197E-4 |
| k hat (KM) | 1.189 | k star (KM) | 1.036 |
| nu hat (KM) | 45.17 | nu star (KM) | 39.37 |
| theta hat (KM) | 0.00245 | theta star (KM) | 0.00281 |
| 80% gamma percentile (KM) | 0.00468 | 90% gamma percentile (KM) | 0.00665 |
| 95% gamma percentile (KM) | 0.00862 | 99% gamma percentile (KM) | 0.0132 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (39.37, α) | 26 | Adjusted Chi Square Value (39.37, β) | 25.05 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.00441 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.00458 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.955 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.892 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.131 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.207 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.00291 | Mean in Log Scale | -6.312 |
| SD in Original Scale | 0.00275 | SD in Log Scale | 1.066 |
| 95% t UCL (assumes normality of ROS data) | 0.004 | 95% Percentile Bootstrap UCL | 0.00393 |
| 95% BCA Bootstrap UCL | 0.00417 | 95% Bootstrap t UCL | 0.00424 |
| 95% H-UCL (Log ROS) | 0.00632 | | |

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -6.301 | KM Geo Mean | 0.00184 |
| KM SD (logged) | 1.016 | 95% Critical H Value (KM-Log) | 2.634 |
| KM Standard Error of Mean (logged) | 0.24 | 95% H-UCL (KM -Log) | 0.00578 |
| KM SD (logged) | 1.016 | 95% Critical H Value (KM-Log) | 2.634 |
| KM Standard Error of Mean (logged) | 0.24 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.0029 | Mean in Log Scale | -6.374 |
| SD in Original Scale | 0.00276 | SD in Log Scale | 1.188 |
| 95% t UCL (Assumes normality) | 0.004 | 95% H-Stat UCL | 0.00776 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Gamma Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM Adjusted Gamma UCL | 0.00458 | 95% GROS Adjusted Gamma UCL | 0.00595 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**4,4'-DDE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 19 | Number of Distinct Observations | 16 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.001 | Mean | 0.00663 |
| Maximum | 0.016 | Median | 0.0049 |
| SD | 0.00463 | Std. Error of Mean | 0.00106 |
| Coefficient of Variation | 0.698 | Skewness | 0.622 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.898 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.901 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.208 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.197 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
|---|---|---|---|
| 95% Student's-t UCL | 0.00847 | 95% Adjusted-CLT UCL (Chen-1995) | 0.00853 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.00849 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.429 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.752 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.139 | **Kolmogorov-Smirnov Gamma GOF Test** | |
| 5% K-S Critical Value | 0.201 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 2 | k star (bias corrected MLE) | 1.719 |
| Theta hat (MLE) | 0.00331 | Theta star (bias corrected MLE) | 0.00385 |
| nu hat (MLE) | 76 | nu star (bias corrected) | 65.33 |
| MLE Mean (bias corrected) | 0.00663 | MLE Sd (bias corrected) | 0.00505 |
| | | Approximate Chi Square Value (0.05) | 47.73 |
| Adjusted Level of Significance | 0.0369 | Adjusted Chi Square Value | 46.42 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50) | 0.00907 | 95% Adjusted Gamma UCL (use when n<50) | 0.00933 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.951 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.901 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.146 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.197 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -6.908 | Mean of logged Data | -5.287 |
| Maximum of Logged Data | -4.135 | SD of logged Data | 0.799 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.0108 | 90% Chebyshev (MVUE) UCL | 0.0109 |
| 95% Chebyshev (MVUE) UCL | 0.0127 | 97.5% Chebyshev (MVUE) UCL | 0.0152 |
| 99% Chebyshev (MVUE) UCL | 0.0202 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.00837 | 95% Jackknife UCL | 0.00847 |
| 95% Standard Bootstrap UCL | 0.00836 | 95% Bootstrap-t UCL | 0.00868 |
| 95% Hall's Bootstrap UCL | 0.00836 | 95% Percentile Bootstrap UCL | 0.00835 |
| 95% BCA Bootstrap UCL | 0.00835 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.00981 | 95% Chebyshev(Mean, Sd) UCL | 0.0113 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.0133 | 99% Chebyshev(Mean, Sd) UCL | 0.0172 |

**Suggested UCL to Use**

95% Adjusted Gamma UCL 0.00933

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**AROCLOR-1254**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 19 | Number of Distinct Observations | 19 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.004 | Mean | 0.0173 |
| Maximum | 0.054 | Median | 0.013 |
| SD | 0.0135 | Std. Error of Mean | 0.00309 |
| Coefficient of Variation | 0.778 | Skewness | 1.41 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.845 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.901 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.195 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.197 | Data appear Normal at 5% Significance Level | |

Data appear Approximate Normal at 5% Significance Level

**Assuming Normal Distribution**

| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
|---|---|---|---|
| 95% Student's-t UCL | 0.0227 | 95% Adjusted-CLT UCL (Chen-1995) | 0.0235 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.0228 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.501 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.752 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.184 | **Kolmogorov-Smirnov Gamma GOF Test** | |
| 5% K-S Critical Value | 0.201 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 2.066 | k star (bias corrected MLE) | 1.775 |
| Theta hat (MLE) | 0.00838 | Theta star (bias corrected MLE) | 0.00975 |
| nu hat (MLE) | 78.51 | nu star (bias corrected) | 67.45 |
| MLE Mean (bias corrected) | 0.0173 | MLE Sd (bias corrected) | 0.013 |
| | | Approximate Chi Square Value (0.05) | 49.55 |
| Adjusted Level of Significance | 0.0369 | Adjusted Chi Square Value | 48.21 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 0.0236 | 95% Adjusted Gamma UCL (use when n<50) | 0.0242 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.956 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.901 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.156 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.197 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -5.521 | Mean of logged Data | -4.318 |
| Maximum of Logged Data | -2.919 | SD of logged Data | 0.737 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.0259 | 90% Chebyshev (MVUE) UCL | 0.0265 |
| 95% Chebyshev (MVUE) UCL | 0.0308 | 97.5% Chebyshev (MVUE) UCL | 0.0366 |
| 99% Chebyshev (MVUE) UCL | 0.0482 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.0224 | 95% Jackknife UCL | 0.0227 |
| 95% Standard Bootstrap UCL | 0.0222 | 95% Bootstrap-t UCL | 0.0242 |
| 95% Hall's Bootstrap UCL | 0.0241 | 95% Percentile Bootstrap UCL | 0.0224 |
| 95% BCA Bootstrap UCL | 0.0235 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.0266 | 95% Chebyshev(Mean, Sd) UCL | 0.0308 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.0366 | 99% Chebyshev(Mean, Sd) UCL | 0.048 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Student's-t UCL | 0.0227 |

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test

When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

AROCLOR-1260

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 19 | Number of Distinct Observations | 17 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.0054 | Mean | 0.0165 |
| Maximum | 0.043 | Median | 0.013 |
| SD | 0.0103 | Std. Error of Mean | 0.00237 |
| Coefficient of Variation | 0.626 | Skewness | 1.234 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.873 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.901 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.19 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.197 | Data appear Normal at 5% Significance Level | |

Data appear Approximate Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 0.0206 | 95% Adjusted-CLT UCL (Chen-1995) | 0.0211 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.0207 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.37 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.748 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.122 | **Kolmogorov-Smirnov Gamma GOF Test** | |
| 5% K-S Critical Value | 0.2 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 3.101 | k star (bias corrected MLE) | 2.647 |
| Theta hat (MLE) | 0.00533 | Theta star (bias corrected MLE) | 0.00624 |
| nu hat (MLE) | 117.8 | nu star (bias corrected) | 100.6 |
| MLE Mean (bias corrected) | 0.0165 | MLE Sd (bias corrected) | 0.0102 |
| | | Approximate Chi Square Value (0.05) | 78.43 |
| Adjusted Level of Significance | 0.0369 | Adjusted Chi Square Value | 76.72 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 0.0212 | 95% Adjusted Gamma UCL (use when n<50) | 0.0216 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.97 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.901 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.1 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.197 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -5.221 | Mean of logged Data | -4.273 |
| Maximum of Logged Data | -3.147 | SD of logged Data | 0.595 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.0223 | 90% Chebyshev (MVUE) UCL | 0.0235 |
| 95% Chebyshev (MVUE) UCL | 0.0267 | 97.5% Chebyshev (MVUE) UCL | 0.0312 |
| 99% Chebyshev (MVUE) UCL | 0.0399 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.0204 | 95% Jackknife UCL | 0.0206 |
| 95% Standard Bootstrap UCL | 0.0203 | 95% Bootstrap-t UCL | 0.0219 |
| 95% Hall's Bootstrap UCL | 0.0214 | 95% Percentile Bootstrap UCL | 0.0203 |
| 95% BCA Bootstrap UCL | 0.0208 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.0236 | 95% Chebyshev(Mean, Sd) UCL | 0.0268 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.0313 | 99% Chebyshev(Mean, Sd) UCL | 0.0401 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Student's-t UCL | 0.0206 |

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test

When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

| Analyte | Valid Obs | Rec. UCL | Method | Max | UCL>Max |
|---|---|---|---|---|---|
| ARSENIC | 9 | 0.14 | 95% Student's-t UCL | 0.19 | |
| CHROMIUM | 9 | 4.3 | 95% Chebyshev (Mean, Sd) UCL | 6.7 | |
| LEAD | 9 | 0.50 | 95% H-UCL | 1 | |
| 4,4'-DDD | 9 | 0.030 | 95% Student's-t UCL | 0.042 | |
| 4,4'-DDE | 9 | 0.046 | 95% Student's-t UCL | 0.063 | |
| AROCLOR-1254 | 9 | 0.12 | 95% Student's-t UCL | 0.16 | |
| AROCLOR-1260 | 9 | 0.054 | 95% KM (t) UCL | 0.066 | |

CommonCarp_output.xlsx

## UCL Statistics for Data Sets with Non-Detects

| | |
|---|---|
| User Selected Options | |
| Date/Time of Computation | ProUCL 5.17/17/2018 16:18:22 |
| From File | ProUCL_Fish_c.xls |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Number of Bootstrap Operations | 2000 |

## ARSENIC

### General Statistics

| | | | |
|---|---|---|---|
| Total Number of Observations | 9 | Number of Distinct Observations | 8 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.055 | Mean | 0.119 |
| Maximum | 0.19 | Median | 0.12 |
| SD | 0.0409 | Std. Error of Mean | 0.0136 |
| Coefficient of Variation | 0.345 | Skewness | 0.253 |

**Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1**

### Normal GOF Test

| | | |
|---|---|---|
| Shapiro Wilk Test Statistic | 0.984 | **Shapiro Wilk GOF Test** |
| 5% Shapiro Wilk Critical Value | 0.829 | Data appear Normal at 5% Significance Level |
| Lilliefors Test Statistic | 0.168 | **Lilliefors GOF Test** |
| 5% Lilliefors Critical Value | 0.274 | Data appear Normal at 5% Significance Level |

**Data appear Normal at 5% Significance Level**

### Assuming Normal Distribution

| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
|---|---|---|---|
| 95% Student's-t UCL | 0.144 | 95% Adjusted-CLT UCL (Chen-1995) | 0.142 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.144 |

### Gamma GOF Test

| | | |
|---|---|---|
| A-D Test Statistic | 0.172 | **Anderson-Darling Gamma GOF Test** |
| 5% A-D Critical Value | 0.722 | Detected data appear Gamma Distributed at 5% Significance Level |
| K-S Test Statistic | 0.126 | **Kolmogorov-Smirnov Gamma GOF Test** |
| 5% K-S Critical Value | 0.279 | Detected data appear Gamma Distributed at 5% Significance Level |

**Detected data appear Gamma Distributed at 5% Significance Level**

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 8.808 | k star (bias corrected MLE) | 5.946 |
| Theta hat (MLE) | 0.0135 | Theta star (bias corrected MLE) | 0.0199 |
| nu hat (MLE) | 158.5 | nu star (bias corrected) | 107 |
| MLE Mean (bias corrected) | 0.119 | MLE Sd (bias corrected) | 0.0486 |
| | | Approximate Chi Square Value (0.05) | 84.15 |
| Adjusted Level of Significance | 0.0231 | Adjusted Chi Square Value | 79.88 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 0.151 | 95% Adjusted Gamma UCL (use when n<50) | 0.159 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.969 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.829 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.148 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.274 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -2.9 | Mean of logged Data | -2.19 |
| Maximum of Logged Data | -1.661 | SD of logged Data | 0.372 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.158 | 90% Chebyshev (MVUE) UCL | 0.164 |
| 95% Chebyshev (MVUE) UCL | 0.184 | 97.5% Chebyshev (MVUE) UCL | 0.212 |
| 99% Chebyshev (MVUE) UCL | 0.267 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.141 | 95% Jackknife UCL | 0.144 |
| 95% Standard Bootstrap UCL | 0.14 | 95% Bootstrap-t UCL | 0.145 |
| 95% Hall's Bootstrap UCL | 0.146 | 95% Percentile Bootstrap UCL | 0.139 |
| 95% BCA Bootstrap UCL | 0.14 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.159 | 95% Chebyshev(Mean, Sd) UCL | 0.178 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.204 | 99% Chebyshev(Mean, Sd) UCL | 0.254 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Student's-t UCL | 0.144 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**CHROMIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 9 | Number of Distinct Observations | 9 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.13 | Mean | 1.166 |
| Maximum | 6.7 | Median | 0.24 |
| SD | 2.125 | Std. Error of Mean | 0.708 |
| Coefficient of Variation | 1.822 | Skewness | 2.752 |

**Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.**
**For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).**
**Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1**

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.548 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.829 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.345 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.274 | Data Not Normal at 5% Significance Level | |

**Data Not Normal at 5% Significance Level**

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 2.483 | 95% Adjusted-CLT UCL (Chen-1995) | 3.025 |
| | | 95% Modified-t UCL (Johnson-1978) | 2.591 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.079 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.759 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.335 | **Kolmogorov-Smirnov Gamma GOF Test** | |
| 5% K-S Critical Value | 0.291 | Data Not Gamma Distributed at 5% Significance Level | |

**Data Not Gamma Distributed at 5% Significance Level**

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.65 | k star (bias corrected MLE) | 0.508 |
| Theta hat (MLE) | 1.794 | Theta star (bias corrected MLE) | 2.298 |
| nu hat (MLE) | 11.7 | nu star (bias corrected) | 9.135 |
| MLE Mean (bias corrected) | 1.166 | MLE Sd (bias corrected) | 1.637 |
| | | Approximate Chi Square Value (0.05) | 3.409 |
| Adjusted Level of Significance | 0.0231 | Adjusted Chi Square Value | 2.713 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 3.125 | 95% Adjusted Gamma UCL (use when n<50) | 3.926 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.836 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.829 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.284 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.274 | Data Not Lognormal at 5% Significance Level | |

Data appear Approximate Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -2.04 | Mean of logged Data | -0.786 |
| Maximum of Logged Data | 1.902 | SD of logged Data | 1.292 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 6.297 | 90% Chebyshev (MVUE) UCL | 2.137 |
| 95% Chebyshev (MVUE) UCL | 2.691 | 97.5% Chebyshev (MVUE) UCL | 3.461 |
| 99% Chebyshev (MVUE) UCL | 4.973 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 2.331 | 95% Jackknife UCL | 2.483 |
| 95% Standard Bootstrap UCL | 2.264 | 95% Bootstrap-t UCL | 7.246 |
| 95% Hall's Bootstrap UCL | 7.259 | 95% Percentile Bootstrap UCL | 2.502 |
| 95% BCA Bootstrap UCL | 3.098 | | |
| 90% Chebyshev(Mean, Sd) UCL | 3.291 | 95% Chebyshev(Mean, Sd) UCL | 4.253 |
| 97.5% Chebyshev(Mean, Sd) UCL | 5.589 | 99% Chebyshev(Mean, Sd) UCL | 8.213 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Chebyshev (Mean, Sd) UCL | 4.253 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**LEAD**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 9 | Number of Distinct Observations | 8 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.044 | Mean | 0.212 |
| Maximum | 1 | Median | 0.127 |
| SD | 0.299 | Std. Error of Mean | 0.0996 |
| Coefficient of Variation | 1.409 | Skewness | 2.876 |

**Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.**
**For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).**
**Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1**

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.532 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.829 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.445 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.274 | Data Not Normal at 5% Significance Level | |

**Data Not Normal at 5% Significance Level**

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 0.397 | 95% Adjusted-CLT UCL (Chen-1995) | 0.478 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.413 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.066 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.74 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.359 | **Kolmogorov-Smirnov Gamma GOF Test** | |
| 5% K-S Critical Value | 0.286 | Data Not Gamma Distributed at 5% Significance Level | |

**Data Not Gamma Distributed at 5% Significance Level**

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.213 | k star (bias corrected MLE) | 0.883 |
| Theta hat (MLE) | 0.175 | Theta star (bias corrected MLE) | 0.24 |
| nu hat (MLE) | 21.83 | nu star (bias corrected) | 15.89 |
| MLE Mean (bias corrected) | 0.212 | MLE Sd (bias corrected) | 0.226 |
| | | Approximate Chi Square Value (0.05) | 7.883 |
| Adjusted Level of Significance | 0.0231 | Adjusted Chi Square Value | 6.729 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 0.427 | 95% Adjusted Gamma UCL (use when n<50) | 0.501 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.86 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.829 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.28 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.274 | Data Not Lognormal at 5% Significance Level | |

**Data appear Approximate Lognormal at 5% Significance Level**

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -3.124 | Mean of logged Data | -2.017 |
| Maximum of Logged Data | 0 | SD of logged Data | 0.885 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.502 | 90% Chebyshev (MVUE) UCL | 0.357 |
| 95% Chebyshev (MVUE) UCL | 0.434 | 97.5% Chebyshev (MVUE) UCL | 0.541 |
| 99% Chebyshev (MVUE) UCL | 0.751 | | |

**Nonparametric Distribution Free UCL Statistics**

**Data appear to follow a Discernible Distribution at 5% Significance Level**

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.376 | 95% Jackknife UCL | 0.397 |
| 95% Standard Bootstrap UCL | 0.365 | 95% Bootstrap-t UCL | 1.055 |
| 95% Hall's Bootstrap UCL | 1.209 | 95% Percentile Bootstrap UCL | 0.405 |
| 95% BCA Bootstrap UCL | 0.502 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.511 | 95% Chebyshev(Mean, Sd) UCL | 0.646 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.834 | 99% Chebyshev(Mean, Sd) UCL | 1.203 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% H-UCL | 0.502 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**ProUCL computes and outputs H-statistic based UCLs for historical reasons only.**

**H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.**

**It is therefore recommended to avoid the use of H-statistic based 95% UCLs.**

**Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.**

**4,4'-DDD**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 9 | Number of Distinct Observations | 9 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.0017 | Mean | 0.0204 |
| Maximum | 0.042 | Median | 0.019 |
| SD | 0.0147 | Std. Error of Mean | 0.0049 |
| Coefficient of Variation | 0.721 | Skewness | 0.181 |

**Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.**
**For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).**
**Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1**

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.921 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.829 | Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.173 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.274 | Data appear Normal at 5% Significance Level | |

**Data appear Normal at 5% Significance Level**

**Assuming Normal Distribution**

| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
|---|---|---|---|
| 95% Student's-t UCL | 0.0295 | 95% Adjusted-CLT UCL (Chen-1995) | 0.0288 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.0296 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.397 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.736 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.222 | **Kolmogorov-Smirnov Gamma GOF Test** | |
| 5% K-S Critical Value | 0.284 | Detected data appear Gamma Distributed at 5% Significance Level | |

**Detected data appear Gamma Distributed at 5% Significance Level**

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.42 | k star (bias corrected MLE) | 1.021 |
| Theta hat (MLE) | 0.0144 | Theta star (bias corrected MLE) | 0.02 |
| nu hat (MLE) | 25.56 | nu star (bias corrected) | 18.37 |
| MLE Mean (bias corrected) | 0.0204 | MLE Sd (bias corrected) | 0.0202 |
| | | Approximate Chi Square Value (0.05) | 9.662 |
| Adjusted Level of Significance | 0.0231 | Adjusted Chi Square Value | 8.363 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 0.0388 | 95% Adjusted Gamma UCL (use when n<50) | 0.0448 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.883 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.829 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.262 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.274 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -6.377 | Mean of logged Data | -4.284 |
| Maximum of Logged Data | -3.17 | SD of logged Data | 1.103 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.0981 | 90% Chebyshev (MVUE) UCL | 0.0495 |
| 95% Chebyshev (MVUE) UCL | 0.0614 | 97.5% Chebyshev (MVUE) UCL | 0.078 |
| 99% Chebyshev (MVUE) UCL | 0.111 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.0285 | 95% Jackknife UCL | 0.0295 |
| 95% Standard Bootstrap UCL | 0.0283 | 95% Bootstrap-t UCL | 0.0302 |
| 95% Hall's Bootstrap UCL | 0.0277 | 95% Percentile Bootstrap UCL | 0.0279 |
| 95% BCA Bootstrap UCL | 0.0284 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.0351 | 95% Chebyshev(Mean, Sd) UCL | 0.0418 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.051 | 99% Chebyshev(Mean, Sd) UCL | 0.0692 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Student's-t UCL | 0.0295 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**4,4'-DDE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 9 | Number of Distinct Observations | 8 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.0016 | Mean | 0.0325 |
| Maximum | 0.063 | Median | 0.03 |
| SD | 0.022 | Std. Error of Mean | 0.00734 |
| Coefficient of Variation | 0.679 | Skewness | 0.0243 |

**Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.**
**For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).**
**Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1**

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.928 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.829 | Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.18 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.274 | Data appear Normal at 5% Significance Level | |

**Data appear Normal at 5% Significance Level**

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 0.0461 | 95% Adjusted-CLT UCL (Chen-1995) | 0.0446 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.0461 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.452 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.736 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.228 | **Kolmogorov-Smirnov Gamma GOF Test** | |
| 5% K-S Critical Value | 0.285 | Detected data appear Gamma Distributed at 5% Significance Level | |

**Detected data appear Gamma Distributed at 5% Significance Level**

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.407 | k star (bias corrected MLE) | 1.012 |
| Theta hat (MLE) | 0.0231 | Theta star (bias corrected MLE) | 0.0321 |
| nu hat (MLE) | 25.32 | nu star (bias corrected) | 18.21 |
| MLE Mean (bias corrected) | 0.0325 | MLE Sd (bias corrected) | 0.0323 |
| | | Approximate Chi Square Value (0.05) | 9.545 |
| Adjusted Level of Significance | 0.0231 | Adjusted Chi Square Value | 8.255 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 0.0619 | 95% Adjusted Gamma UCL (use when n<50) | 0.0716 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.831 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.829 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.262 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.274 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -6.438 | Mean of logged Data | -3.824 |
| Maximum of Logged Data | -2.765 | SD of logged Data | 1.179 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.201 | 90% Chebyshev (MVUE) UCL | 0.0872 |
| 95% Chebyshev (MVUE) UCL | 0.109 | 97.5% Chebyshev (MVUE) UCL | 0.139 |
| 99% Chebyshev (MVUE) UCL | 0.198 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.0445 | 95% Jackknife UCL | 0.0461 |
| 95% Standard Bootstrap UCL | 0.044 | 95% Bootstrap-t UCL | 0.0458 |
| 95% Hall's Bootstrap UCL | 0.0435 | 95% Percentile Bootstrap UCL | 0.0442 |
| 95% BCA Bootstrap UCL | 0.0433 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.0545 | 95% Chebyshev(Mean, Sd) UCL | 0.0645 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.0783 | 99% Chebyshev(Mean, Sd) UCL | 0.106 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Student's-t UCL | 0.0461 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

AROCLOR-1254

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 9 | Number of Distinct Observations | 7 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.005 | Mean | 0.0899 |
| Maximum | 0.16 | Median | 0.094 |
| SD | 0.0528 | Std. Error of Mean | 0.0176 |
| Coefficient of Variation | 0.588 | Skewness | -0.419 |

**Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.**
**For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).**
**Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1**

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.933 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.829 | Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.221 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.274 | Data appear Normal at 5% Significance Level | |

**Data appear Normal at 5% Significance Level**

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 0.123 | 95% Adjusted-CLT UCL (Chen-1995) | 0.116 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.122 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.648 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.733 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.22 | **Kolmogorov-Smirnov Gamma GOF Test** | |
| 5% K-S Critical Value | 0.284 | Detected data appear Gamma Distributed at 5% Significance Level | |

**Detected data appear Gamma Distributed at 5% Significance Level**

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.624 | k star (bias corrected MLE) | 1.157 |
| Theta hat (MLE) | 0.0553 | Theta star (bias corrected MLE) | 0.0777 |
| nu hat (MLE) | 29.24 | nu star (bias corrected) | 20.83 |
| MLE Mean (bias corrected) | 0.0899 | MLE Sd (bias corrected) | 0.0836 |
| | | Approximate Chi Square Value (0.05) | 11.46 |
| Adjusted Level of Significance | 0.0231 | Adjusted Chi Square Value | 10.03 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 0.163 | 95% Adjusted Gamma UCL (use when n<50) | 0.187 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.779 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.829 | Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.272 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.274 | Data appear Lognormal at 5% Significance Level | |

Data appear Approximate Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -5.298 | Mean of logged Data | -2.748 |
| Maximum of Logged Data | -1.833 | SD of logged Data | 1.117 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.477 | 90% Chebyshev (MVUE) UCL | 0.234 |
| 95% Chebyshev (MVUE) UCL | 0.291 | 97.5% Chebyshev (MVUE) UCL | 0.37 |
| 99% Chebyshev (MVUE) UCL | 0.526 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.119 | 95% Jackknife UCL | 0.123 |
| 95% Standard Bootstrap UCL | 0.117 | 95% Bootstrap-t UCL | 0.119 |
| 95% Hall's Bootstrap UCL | 0.116 | 95% Percentile Bootstrap UCL | 0.117 |
| 95% BCA Bootstrap UCL | 0.115 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.143 | 95% Chebyshev(Mean, Sd) UCL | 0.167 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.2 | 99% Chebyshev(Mean, Sd) UCL | 0.265 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Student's-t UCL | 0.123 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

AROCLOR-1260

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 9 | Number of Distinct Observations | 9 |
| Number of Detects | 8 | Number of Non-Detects | 1 |
| Number of Distinct Detects | 8 | Number of Distinct Non-Detects | 1 |
| Minimum Detect | 0.02 | Minimum Non-Detect | 0.0031 |
| Maximum Detect | 0.066 | Maximum Non-Detect | 0.0031 |
| Variance Detects | 2.7070E-4 | Percent Non-Detects | 11.11% |
| Mean Detects | 0.0451 | SD Detects | 0.0165 |
| Median Detects | 0.046 | CV Detects | 0.365 |
| Skewness Detects | -0.206 | Kurtosis Detects | -1.098 |
| Mean of Logged Detects | -3.167 | SD of Logged Detects | 0.415 |

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.96 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.818 | Detected Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.124 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.283 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| KM Mean | 0.0405 | KM Standard Error of Mean | 0.00699 |
| KM SD | 0.0196 | 95% KM (BCA) UCL | 0.0508 |
| 95% KM (t) UCL | 0.0535 | 95% KM (Percentile Bootstrap) UCL | 0.0508 |
| 95% KM (z) UCL | 0.052 | 95% KM Bootstrap t UCL | 0.0513 |
| 90% KM Chebyshev UCL | 0.0614 | 95% KM Chebyshev UCL | 0.0709 |
| 97.5% KM Chebyshev UCL | 0.0841 | 99% KM Chebyshev UCL | 0.11 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.242 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.717 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.158 | **Kolmogorov-Smirnov GOF** | |
| 5% K-S Critical Value | 0.295 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 7.443 | k star (bias corrected MLE) | 4.735 |
| Theta hat (MLE) | 0.00606 | Theta star (bias corrected MLE) | 0.00953 |
| nu hat (MLE) | 119.1 | nu star (bias corrected) | 75.76 |
| Mean (detects) | 0.0451 | | |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.0124 | Mean | 0.0415 |
| Maximum | 0.066 | Median | 0.042 |
| SD | 0.0189 | CV | 0.455 |
| k hat (MLE) | 4.306 | k star (bias corrected MLE) | 2.945 |
| Theta hat (MLE) | 0.00963 | Theta star (bias corrected MLE) | 0.0141 |
| nu hat (MLE) | 77.52 | nu star (bias corrected) | 53.01 |
| Adjusted Level of Significance (β) | 0.0231 | | |
| Approximate Chi Square Value (53.01, α) | 37.28 | Adjusted Chi Square Value (53.01, β) | 34.52 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.059 | 95% Gamma Adjusted UCL (use when n<50) | 0.0637 |

**Estimates of Gamma Parameters using KM Estimates**

| | | | |
|---|---|---|---|
| Mean (KM) | 0.0405 | SD (KM) | 0.0196 |
| Variance (KM) | 3.8497E-4 | SE of Mean (KM) | 0.00699 |
| k hat (KM) | 4.251 | k star (KM) | 2.908 |
| nu hat (KM) | 76.52 | nu star (KM) | 52.35 |
| theta hat (KM) | 0.00952 | theta star (KM) | 0.0139 |
| 80% gamma percentile (KM) | 0.0579 | 90% gamma percentile (KM) | 0.0723 |
| 95% gamma percentile (KM) | 0.0857 | 99% gamma percentile (KM) | 0.115 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (52.35, α) | 36.73 | Adjusted Chi Square Value (52.35, β) | 33.99 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.0577 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.0623 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.931 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.818 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.16 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.283 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.0418 | Mean in Log Scale | -3.278 |
| SD in Original Scale | 0.0183 | SD in Log Scale | 0.512 |
| 95% t UCL (assumes normality of ROS data) | 0.0532 | 95% Percentile Bootstrap UCL | 0.0516 |
| 95% BCA Bootstrap UCL | 0.0513 | 95% Bootstrap t UCL | 0.0528 |
| 95% H-UCL (Log ROS) | 0.0645 | | |

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -3.457 | KM Geo Mean | 0.0315 |
| KM SD (logged) | 0.898 | 95% Critical H Value (KM-Log) | 3.017 |
| KM Standard Error of Mean (logged) | 0.32 | 95% H-UCL (KM -Log) | 0.123 |
| KM SD (logged) | 0.898 | 95% Critical H Value (KM-Log) | 3.017 |
| KM Standard Error of Mean (logged) | 0.32 | | |

**DL/2 Statistics**

| DL/2 Normal | | DL/2 Log-Transformed | |
|---|---|---|---|
| Mean in Original Scale | 0.0403 | Mean in Log Scale | -3.534 |
| SD in Original Scale | 0.0212 | SD in Log Scale | 1.167 |
| 95% t UCL (Assumes normality) | 0.0534 | 95% H-Stat UCL | 0.257 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (t) UCL | 0.0535 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

| Analyte | Valid Obs | Rec. UCL | Method | Max | UCL>Max |
|---|---|---|---|---|---|
| ARSENIC | 5 | 0.059 | 95% KM (t) UCL | 0.058 | Y |
| CHROMIUM | 5 | 11 | 95% Student's-t UCL | 14 | |
| LEAD | 5 | NA | NA | NA | |
| 4,4'-DDD | 5 | 0.0084 | 95% Adjusted Gamma UCL | 0.0045 | Y |
| 4,4'-DDE | 5 | 0.011 | 95% Adjusted Gamma UCL | 0.0078 | Y |
| AROCLOR-1254 | 5 | 0.021 | 95% Student's-t UCL | 0.027 | |
| AROCLOR-1260 | 5 | 0.010 | 95% Student's-t UCL | 0.012 | |

LargemouthBass_output.xlsx

## UCL Statistics for Data Sets with Non-Detects

| User Selected Options | |
|---|---|
| Date/Time of Computation | ProUCL 5.17/17/2018 16:19:24 |
| From File | ProUCL_Fish_e.xls |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Number of Bootstrap Operations | 2000 |

## ARSENIC

### General Statistics

| | | | |
|---|---|---|---|
| Total Number of Observations | 5 | Number of Distinct Observations | 5 |
| Number of Detects | 2 | Number of Non-Detects | 3 |
| Number of Distinct Detects | 2 | Number of Distinct Non-Detects | 3 |
| Minimum Detect | 0.057 | Minimum Non-Detect | 0.185 |
| Maximum Detect | 0.058 | Maximum Non-Detect | 0.195 |
| Variance Detects | 5.0000E-7 | Percent Non-Detects | 60% |
| Mean Detects | 0.0575 | SD Detects | 7.0711E-4 |
| Median Detects | 0.0575 | CV Detects | 0.0123 |
| Skewness Detects | N/A | Kurtosis Detects | N/A |
| Mean of Logged Detects | -2.856 | SD of Logged Detects | 0.0123 |

Warning: Data set has only 2 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.

For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

### Normal GOF Test on Detects Only

Not Enough Data to Perform GOF Test

### Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

| | | | |
|---|---|---|---|
| KM Mean | 0.0575 | KM Standard Error of Mean | 5.0000E-4 |
| KM SD | 5.0000E-4 | 95% KM (BCA) UCL | N/A |
| 95% KM (t) UCL | 0.0586 | 95% KM (Percentile Bootstrap) UCL | N/A |
| 95% KM (z) UCL | 0.0583 | 95% KM Bootstrap t UCL | N/A |
| 90% KM Chebyshev UCL | 0.059 | 95% KM Chebyshev UCL | 0.0597 |
| 97.5% KM Chebyshev UCL | 0.0606 | 99% KM Chebyshev UCL | 0.0625 |

### Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 13225 | k star (bias corrected MLE) | N/A |
| Theta hat (MLE) | 4.3479E-6 | Theta star (bias corrected MLE) | N/A |
| nu hat (MLE) | 52899 | nu star (bias corrected) | N/A |
| Mean (detects) | 0.0575 | | |

**Estimates of Gamma Parameters using KM Estimates**

| | | | |
|---|---|---|---|
| Mean (KM) | 0.0575 | SD (KM) | 5.0000E-4 |
| Variance (KM) | 2.5000E-7 | SE of Mean (KM) | 5.0000E-4 |
| k hat (KM) | 13225 | k star (KM) | 5290 |
| nu hat (KM) | 132250 | nu star (KM) | 52901 |
| theta hat (KM) | 4.3478E-6 | theta star (KM) | 1.0869E-5 |
| 80% gamma percentile (KM) | 0.0582 | 90% gamma percentile (KM) | 0.0585 |
| 95% gamma percentile (KM) | 0.0588 | 99% gamma percentile (KM) | 0.0594 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| | | Adjusted Level of Significance (β) | 0.0086 |
| Approximate Chi Square Value (N/A, α) | 52367 | Adjusted Chi Square Value (N/A, β) | 52130 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.0581 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.0584 |

**Lognormal GOF Test on Detected Observations Only**

Not Enough Data to Perform GOF Test

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.0575 | Mean in Log Scale | -2.856 |
| SD in Original Scale | 3.5356E-4 | SD in Log Scale | 0.00615 |
| 95% t UCL (assumes normality of ROS data) | 0.0578 | 95% Percentile Bootstrap UCL | N/A |
| 95% BCA Bootstrap UCL | N/A | 95% Bootstrap t UCL | N/A |
| 95% H-UCL (Log ROS) | N/A | | |

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -2.856 | KM Geo Mean | 0.0575 |
| KM SD (logged) | 0.0087 | 95% Critical H Value (KM-Log) | N/A |
| KM Standard Error of Mean (logged) | 0.0087 | 95% H-UCL (KM -Log) | N/A |
| KM SD (logged) | 0.0087 | 95% Critical H Value (KM-Log) | N/A |
| KM Standard Error of Mean (logged) | 0.0087 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.08 | Mean in Log Scale | -2.555 |
| SD in Original Scale | 0.0206 | SD in Log Scale | 0.276 |
| 95% t UCL (Assumes normality) | 0.0997 | 95% H-Stat UCL | 0.112 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.0586 | KM H-UCL | N/A |
| 95% KM (BCA) UCL | N/A | | |

**Warning: One or more Recommended UCL(s) not available!**

**Warning: Recommended UCL exceeds the maximum observation**

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**CHROMIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 5 | Number of Distinct Observations | 5 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.52 | Mean | 5.673 |
| Maximum | 14 | Median | 2.145 |
| SD | 6.011 | Std. Error of Mean | 2.688 |
| Coefficient of Variation | 1.06 | Skewness | 0.798 |

**Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.**

**For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).**

**Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1**

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.839 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.762 | Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.321 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.343 | Data appear Normal at 5% Significance Level | |

**Data appear Normal at 5% Significance Level**

**Assuming Normal Distribution**

| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
|---|---|---|---|
| 95% Student's-t UCL | 11.4 | 95% Adjusted-CLT UCL (Chen-1995) | 11.12 |
| | | 95% Modified-t UCL (Johnson-1978) | 11.56 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.359 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.693 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.269 | **Kolmogorov-Smirnov Gamma GOF Test** | |
| 5% K-S Critical Value | 0.365 | Detected data appear Gamma Distributed at 5% Significance Level | |

**Detected data appear Gamma Distributed at 5% Significance Level**

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.925 | k star (bias corrected MLE) | 0.504 |
| Theta hat (MLE) | 6.13 | Theta star (bias corrected MLE) | 11.27 |
| nu hat (MLE) | 9.254 | nu star (bias corrected) | 5.035 |
| MLE Mean (bias corrected) | 5.673 | MLE Sd (bias corrected) | 7.995 |
| | | Approximate Chi Square Value (0.05) | 1.168 |
| Adjusted Level of Significance | 0.0086 | Adjusted Chi Square Value | 0.544 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 24.45 | 95% Adjusted Gamma UCL (use when n<50) | 52.48 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.934 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.762 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.212 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.343 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -0.654 | Mean of logged Data | 1.106 |
| Maximum of Logged Data | 2.639 | SD of logged Data | 1.362 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 641.3 | 90% Chebyshev (MVUE) UCL | 15.8 |
| 95% Chebyshev (MVUE) UCL | 20.28 | 97.5% Chebyshev (MVUE) UCL | 26.51 |
| 99% Chebyshev (MVUE) UCL | 38.74 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 10.09 | 95% Jackknife UCL | 11.4 |
| 95% Standard Bootstrap UCL | 9.591 | 95% Bootstrap-t UCL | 41.89 |
| 95% Hall's Bootstrap UCL | 69.04 | 95% Percentile Bootstrap UCL | 10.07 |
| 95% BCA Bootstrap UCL | 9.96 | | |
| 90% Chebyshev(Mean, Sd) UCL | 13.74 | 95% Chebyshev(Mean, Sd) UCL | 17.39 |
| 97.5% Chebyshev(Mean, Sd) UCL | 22.46 | 99% Chebyshev(Mean, Sd) UCL | 32.42 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Student's-t UCL | 11.4 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

## LEAD

### General Statistics

| | | | |
|---|---|---|---|
| Total Number of Observations | 5 | Number of Distinct Observations | 5 |
| Number of Detects | 1 | Number of Non-Detects | 4 |
| Number of Distinct Detects | 1 | Number of Distinct Non-Detects | 4 |

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!

It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable LEAD was not processed!

## 4,4'-DDD

### General Statistics

| | | | |
|---|---|---|---|
| Total Number of Observations | 5 | Number of Distinct Observations | 5 |
| | | Number of Missing Observations | 0 |
| Minimum | 4.6000E-4 | Mean | 0.00153 |
| Maximum | 0.0045 | Median | 9.5000E-4 |
| SD | 0.00168 | Std. Error of Mean | 7.5217E-4 |
| Coefficient of Variation | 1.102 | Skewness | 2.109 |

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use

guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.

For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

### Normal GOF Test

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.693 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.762 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.4 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.343 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

### Assuming Normal Distribution

| 95% Normal UCL | | 95% UCLs (Adjusted for Skewness) | |
|---|---|---|---|
| 95% Student's-t UCL | 0.00313 | 95% Adjusted-CLT UCL (Chen-1995) | 0.00352 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.00325 |

### Gamma GOF Test

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.568 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.686 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.341 | **Kolmogorov-Smirnov Gamma GOF Test** | |
| 5% K-S Critical Value | 0.362 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.519 | k star (bias corrected MLE) | 0.741 |
| Theta hat (MLE) | 0.001 | Theta star (bias corrected MLE) | 0.00206 |
| nu hat (MLE) | 15.19 | nu star (bias corrected) | 7.409 |
| MLE Mean (bias corrected) | 0.00153 | MLE Sd (bias corrected) | 0.00177 |
| | | Approximate Chi Square Value (0.05) | 2.398 |
| Adjusted Level of Significance | 0.0086 | Adjusted Chi Square Value | 1.344 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50) | 0.00472 | 95% Adjusted Gamma UCL (use when n<50) | 0.00841 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.886 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.762 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.283 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.343 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -7.684 | Mean of logged Data | -6.849 |
| Maximum of Logged Data | -5.404 | SD of logged Data | 0.879 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.0107 | 90% Chebyshev (MVUE) UCL | 0.00305 |
| 95% Chebyshev (MVUE) UCL | 0.00379 | 97.5% Chebyshev (MVUE) UCL | 0.00481 |
| 99% Chebyshev (MVUE) UCL | 0.00682 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.00276 | 95% Jackknife UCL | 0.00313 |
| 95% Standard Bootstrap UCL | 0.00262 | 95% Bootstrap-t UCL | 0.00884 |
| 95% Hall's Bootstrap UCL | 0.00992 | 95% Percentile Bootstrap UCL | 0.00292 |
| 95% BCA Bootstrap UCL | 0.00304 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.00378 | 95% Chebyshev(Mean, Sd) UCL | 0.0048 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.00622 | 99% Chebyshev(Mean, Sd) UCL | 0.00901 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Adjusted Gamma UCL | 0.00841 |

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**4,4'-DDE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 5 | Number of Distinct Observations | 5 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.0015 | Mean | 0.00343 |
| Maximum | 0.0078 | Median | 0.0026 |
| SD | 0.00249 | Std. Error of Mean | 0.00111 |
| Coefficient of Variation | 0.726 | Skewness | 2.008 |

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.726 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.762 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.408 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.343 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| | | | |
|---|---|---|---|
| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
| 95% Student's-t UCL | 0.00581 | 95% Adjusted-CLT UCL (Chen-1995) | 0.00633 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.00597 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.625 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.682 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.376 | **Kolmogorov-Smirnov Gamma GOF Test** | |
| 5% K-S Critical Value | 0.359 | Data Not Gamma Distributed at 5% Significance Level | |

Detected data follow Appr. Gamma Distribution at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 3.207 | k star (bias corrected MLE) | 1.416 |
| Theta hat (MLE) | 0.00107 | Theta star (bias corrected MLE) | 0.00242 |
| nu hat (MLE) | 32.07 | nu star (bias corrected) | 14.16 |
| MLE Mean (bias corrected) | 0.00343 | MLE Sd (bias corrected) | 0.00288 |
| | | Approximate Chi Square Value (0.05) | 6.681 |
| Adjusted Level of Significance | 0.0086 | Adjusted Chi Square Value | 4.614 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50) | 0.00727 | 95% Adjusted Gamma UCL (use when n<50) | 0.0105 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.863 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.762 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.338 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.343 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -6.502 | Mean of logged Data | -5.839 |
| Maximum of Logged Data | -4.854 | SD of logged Data | 0.602 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.00941 | 90% Chebyshev (MVUE) UCL | 0.00603 |
| 95% Chebyshev (MVUE) UCL | 0.00724 | 97.5% Chebyshev (MVUE) UCL | 0.00892 |
| 99% Chebyshev (MVUE) UCL | 0.0122 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.00526 | 95% Jackknife UCL | 0.00581 |
| 95% Standard Bootstrap UCL | 0.00511 | 95% Bootstrap-t UCL | 0.0216 |
| 95% Hall's Bootstrap UCL | 0.0165 | 95% Percentile Bootstrap UCL | 0.00477 |
| 95% BCA Bootstrap UCL | 0.0057 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.00677 | 95% Chebyshev(Mean, Sd) UCL | 0.00829 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.0104 | 99% Chebyshev(Mean, Sd) UCL | 0.0145 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Adjusted Gamma UCL | 0.0105 |

Recommended UCL exceeds the maximum observation

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test

When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

AROCLOR-1254

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 5 | Number of Distinct Observations | 5 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.0053 | Mean | 0.0121 |
| Maximum | 0.027 | Median | 0.007 |
| SD | 0.00915 | Std. Error of Mean | 0.00409 |
| Coefficient of Variation | 0.754 | Skewness | 1.445 |

**Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.**
**For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).**
**Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1**

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.812 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.762 | Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.313 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.343 | Data appear Normal at 5% Significance Level | |

**Data appear Normal at 5% Significance Level**

**Assuming Normal Distribution**

| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
|---|---|---|---|
| 95% Student's-t UCL | 0.0209 | 95% Adjusted-CLT UCL (Chen-1995) | 0.0217 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.0213 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.472 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.683 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.327 | **Kolmogorov-Smirnov Gamma GOF Test** | |
| 5% K-S Critical Value | 0.36 | Detected data appear Gamma Distributed at 5% Significance Level | |

**Detected data appear Gamma Distributed at 5% Significance Level**

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 2.633 | k star (bias corrected MLE) | 1.187 |
| Theta hat (MLE) | 0.00461 | Theta star (bias corrected MLE) | 0.0102 |
| nu hat (MLE) | 26.33 | nu star (bias corrected) | 11.87 |
| MLE Mean (bias corrected) | 0.0121 | MLE Sd (bias corrected) | 0.0111 |
| | | Approximate Chi Square Value (0.05) | 5.139 |
| Adjusted Level of Significance | 0.0086 | Adjusted Chi Square Value | 3.388 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 0.028 | 95% Adjusted Gamma UCL (use when n<50) | 0.0425 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.882 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.762 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.295 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.343 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -5.24 | Mean of logged Data | -4.613 |
| Maximum of Logged Data | -3.612 | SD of logged Data | 0.686 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.0432 | 90% Chebyshev (MVUE) UCL | 0.0227 |
| 95% Chebyshev (MVUE) UCL | 0.0275 | 97.5% Chebyshev (MVUE) UCL | 0.0343 |
| 99% Chebyshev (MVUE) UCL | 0.0476 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.0189 | 95% Jackknife UCL | 0.0209 |
| 95% Standard Bootstrap UCL | 0.0181 | 95% Bootstrap-t UCL | 0.0844 |
| 95% Hall's Bootstrap UCL | 0.08 | 95% Percentile Bootstrap UCL | 0.0187 |
| 95% BCA Bootstrap UCL | 0.0198 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.0244 | 95% Chebyshev(Mean, Sd) UCL | 0.03 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.0377 | 99% Chebyshev(Mean, Sd) UCL | 0.0529 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Student's-t UCL | 0.0209 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

AROCLOR-1260

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 5 | Number of Distinct Observations | 5 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.00435 | Mean | 0.00711 |
| Maximum | 0.012 | Median | 0.0054 |
| SD | 0.00336 | Std. Error of Mean | 0.0015 |
| Coefficient of Variation | 0.472 | Skewness | 0.926 |

**Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.**
**For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).**
**Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1**

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.85 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.762 | Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.295 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.343 | Data appear Normal at 5% Significance Level | |

**Data appear Normal at 5% Significance Level**

**Assuming Normal Distribution**

| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
|---|---|---|---|
| 95% Student's-t UCL | 0.0103 | 95% Adjusted-CLT UCL (Chen-1995) | 0.0102 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.0104 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.458 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.68 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.296 | **Kolmogorov-Smirnov Gamma GOF Test** | |
| 5% K-S Critical Value | 0.358 | Detected data appear Gamma Distributed at 5% Significance Level | |

**Detected data appear Gamma Distributed at 5% Significance Level**

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 6.103 | k star (bias corrected MLE) | 2.575 |
| Theta hat (MLE) | 0.00116 | Theta star (bias corrected MLE) | 0.00276 |
| nu hat (MLE) | 61.03 | nu star (bias corrected) | 25.75 |
| MLE Mean (bias corrected) | 0.00711 | MLE Sd (bias corrected) | 0.00443 |
| | | Approximate Chi Square Value (0.05) | 15.18 |
| Adjusted Level of Significance | 0.0086 | Adjusted Chi Square Value | 11.79 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 0.0121 | 95% Adjusted Gamma UCL (use when n<50) | 0.0155 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.873 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.762 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.264 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.343 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -5.438 | Mean of logged Data | -5.03 |
| Maximum of Logged Data | -4.423 | SD of logged Data | 0.45 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.0136 | 90% Chebyshev (MVUE) UCL | 0.0113 |
| 95% Chebyshev (MVUE) UCL | 0.0133 | 97.5% Chebyshev (MVUE) UCL | 0.0159 |
| 99% Chebyshev (MVUE) UCL | 0.0212 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.00958 | 95% Jackknife UCL | 0.0103 |
| 95% Standard Bootstrap UCL | 0.00934 | 95% Bootstrap-t UCL | 0.0223 |
| 95% Hall's Bootstrap UCL | 0.0374 | 95% Percentile Bootstrap UCL | 0.0094 |
| 95% BCA Bootstrap UCL | 0.00956 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.0116 | 95% Chebyshev(Mean, Sd) UCL | 0.0137 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.0165 | 99% Chebyshev(Mean, Sd) UCL | 0.0221 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Student's-t UCL | 0.0103 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

| Analyte | Valid Obs | Rec. UCL | Method | Max | UCL>Max |
|---|---|---|---|---|---|
| ARSENIC | 8 | 0.081 | 95% KM (t) UCL | 0.094 | |
| CHROMIUM | 8 | 2.6 | 95% KM (t) UCL | 3.4 | |
| LEAD | 8 | 0.073 | 95% KM (t) UCL | 0.094 | |
| 4,4'-DDD | 8 | 0.0011 | 95% Student's-t UCL | 0.0013 | |
| 4,4'-DDE | 8 | 0.0025 | 95% Student's-t UCL | 0.0035 | |
| AROCLOR-1254 | 8 | 0.0090 | 95% Student's-t UCL | 0.012 | |
| AROCLOR-1260 | 8 | 0.0071 | 95% KM Adjusted Gamma UCL | 0.0095 | |

BlackCrappie_output.xlsx

## UCL Statistics for Data Sets with Non-Detects

| User Selected Options | |
|---|---|
| Date/Time of Computation | ProUCL 5.17/17/2018 16:18:57 |
| From File | ProUCL_Fish_d.xls |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Number of Bootstrap Operations | 2000 |

## ARSENIC

### General Statistics

| | | | |
|---|---|---|---|
| Total Number of Observations | 8 | Number of Distinct Observations | 7 |
| Number of Detects | 4 | Number of Non-Detects | 4 |
| Number of Distinct Detects | 3 | Number of Distinct Non-Detects | 4 |
| Minimum Detect | 0.065 | Minimum Non-Detect | 0.048 |
| Maximum Detect | 0.094 | Maximum Non-Detect | 0.2 |
| Variance Detects | 1.5425E-4 | Percent Non-Detects | 50% |
| Mean Detects | 0.0763 | SD Detects | 0.0124 |
| Median Detects | 0.073 | CV Detects | 0.163 |
| Skewness Detects | 1.427 | Kurtosis Detects | 2.682 |
| Mean of Logged Detects | -2.583 | SD of Logged Detects | 0.156 |

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

### Normal GOF Test on Detects Only

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.858 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.748 | Detected Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.353 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.375 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Normal at 5% Significance Level

### Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

| | | | |
|---|---|---|---|
| KM Mean | 0.0668 | KM Standard Error of Mean | 0.00752 |
| KM SD | 0.016 | 95% KM (BCA) UCL | N/A |
| 95% KM (t) UCL | 0.0811 | 95% KM (Percentile Bootstrap) UCL | N/A |
| 95% KM (z) UCL | 0.0792 | 95% KM Bootstrap t UCL | N/A |
| 90% KM Chebyshev UCL | 0.0894 | 95% KM Chebyshev UCL | 0.0996 |
| 97.5% KM Chebyshev UCL | 0.114 | 99% KM Chebyshev UCL | 0.142 |

### Gamma GOF Tests on Detected Observations Only

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.455 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.656 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.357 | **Kolmogorov-Smirnov GOF** | |
| 5% K-S Critical Value | 0.394 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 53.54 | k star (bias corrected MLE) | 13.55 |
| Theta hat (MLE) | 0.00142 | Theta star (bias corrected MLE) | 0.00563 |
| nu hat (MLE) | 428.4 | nu star (bias corrected) | 108.4 |
| Mean (detects) | 0.0763 | | |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.0455 | Mean | 0.0659 |
| Maximum | 0.094 | Median | 0.0655 |
| SD | 0.0157 | CV | 0.238 |
| k hat (MLE) | 19.74 | k star (bias corrected MLE) | 12.42 |
| Theta hat (MLE) | 0.00334 | Theta star (bias corrected MLE) | 0.0053 |
| nu hat (MLE) | 315.9 | nu star (bias corrected) | 198.7 |
| Adjusted Level of Significance (β) | 0.0195 | | |
| Approximate Chi Square Value (198.74, α) | 167.1 | Adjusted Chi Square Value (198.74, β) | 159.8 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0783 | 95% Gamma Adjusted UCL (use when n<50) | N/A |

**Estimates of Gamma Parameters using KM Estimates**

| | | | |
|---|---|---|---|
| Mean (KM) | 0.0668 | SD (KM) | 0.016 |
| Variance (KM) | 2.5447E-4 | SE of Mean (KM) | 0.00752 |
| k hat (KM) | 17.55 | k star (KM) | 11.05 |
| nu hat (KM) | 280.8 | nu star (KM) | 176.9 |
| theta hat (KM) | 0.00381 | theta star (KM) | 0.00605 |
| 80% gamma percentile (KM) | 0.0829 | 90% gamma percentile (KM) | 0.0935 |
| 95% gamma percentile (KM) | 0.103 | 99% gamma percentile (KM) | 0.122 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (176.86, α) | 147.1 | Adjusted Chi Square Value (176.86, β) | 140.2 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.0804 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.0843 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.884 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.748 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.337 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.375 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.0671 | Mean in Log Scale | -2.721 |
| SD in Original Scale | 0.0141 | SD in Log Scale | 0.207 |
| 95% t UCL (assumes normality of ROS data) | 0.0765 | 95% Percentile Bootstrap UCL | 0.0752 |
| 95% BCA Bootstrap UCL | 0.0761 | 95% Bootstrap t UCL | 0.0772 |
| 95% H-UCL (Log ROS) | 0.0784 | | |

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -2.734 | KM Geo Mean | 0.0649 |
| KM SD (logged) | 0.24 | 95% Critical H Value (KM-Log) | 1.987 |
| KM Standard Error of Mean (logged) | 0.113 | 95% H-UCL (KM -Log) | 0.0801 |
| KM SD (logged) | 0.24 | 95% Critical H Value (KM-Log) | 1.987 |
| KM Standard Error of Mean (logged) | 0.113 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.0682 | Mean in Log Scale | -2.8 |
| SD in Original Scale | 0.029 | SD in Log Scale | 0.563 |
| 95% t UCL (Assumes normality) | 0.0876 | 95% H-Stat UCL | 0.12 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (t) UCL | 0.0811 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**CHROMIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 8 | Number of Distinct Observations | 7 |
| Number of Detects | 7 | Number of Non-Detects | 1 |
| Number of Distinct Detects | 6 | Number of Distinct Non-Detects | 1 |
| Minimum Detect | 0.11 | Minimum Non-Detect | 0.094 |
| Maximum Detect | 3.4 | Maximum Non-Detect | 0.094 |
| Variance Detects | 1.764 | Percent Non-Detects | 12.5% |
| Mean Detects | 1.897 | SD Detects | 1.328 |
| Median Detects | 2.2 | CV Detects | 0.7 |
| Skewness Detects | -0.463 | Kurtosis Detects | -1.19 |
| Mean of Logged Detects | 0.0939 | SD of Logged Detects | 1.445 |

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.874 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.803 | Detected Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.215 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.304 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| KM Mean | 1.672 | KM Standard Error of Mean | 0.495 |
| KM SD | 1.296 | 95% KM (BCA) UCL | 2.462 |
| 95% KM (t) UCL | 2.609 | 95% KM (Percentile Bootstrap) UCL | 2.425 |
| 95% KM (z) UCL | 2.486 | 95% KM Bootstrap t UCL | 2.568 |
| 90% KM Chebyshev UCL | 3.156 | 95% KM Chebyshev UCL | 3.829 |
| 97.5% KM Chebyshev UCL | 4.762 | 99% KM Chebyshev UCL | 6.595 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.838 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.727 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.344 | **Kolmogorov-Smirnov GOF** | |
| 5% K-S Critical Value | 0.319 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.05 | k star (bias corrected MLE) | 0.695 |
| Theta hat (MLE) | 1.806 | Theta star (bias corrected MLE) | 2.728 |
| nu hat (MLE) | 14.7 | nu star (bias corrected) | 9.736 |
| Mean (detects) | 1.897 | | |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.11 | Mean | 1.693 |
| Maximum | 3.4 | Median | 2.05 |
| SD | 1.359 | CV | 0.803 |
| k hat (MLE) | 0.95 | k star (bias corrected MLE) | 0.677 |
| Theta hat (MLE) | 1.781 | Theta star (bias corrected MLE) | 2.5 |
| nu hat (MLE) | 15.21 | nu star (bias corrected) | 10.84 |
| Adjusted Level of Significance (β) | 0.0195 | | |
| Approximate Chi Square Value (10.84, α) | 4.471 | Adjusted Chi Square Value (10.84, β) | 3.496 |
| 95% Gamma Approximate UCL (use when n>=50) | 4.103 | 95% Gamma Adjusted UCL (use when n<50) | 5.248 |

**Estimates of Gamma Parameters using KM Estimates**

| | | | |
|---|---|---|---|
| Mean (KM) | 1.672 | SD (KM) | 1.296 |
| Variance (KM) | 1.679 | SE of Mean (KM) | 0.495 |
| k hat (KM) | 1.665 | k star (KM) | 1.124 |
| nu hat (KM) | 26.63 | nu star (KM) | 17.98 |
| theta hat (KM) | 1.004 | theta star (KM) | 1.488 |
| 80% gamma percentile (KM) | 2.664 | 90% gamma percentile (KM) | 3.74 |
| 95% gamma percentile (KM) | 4.807 | 99% gamma percentile (KM) | 7.264 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (17.98, α) | 9.376 | Adjusted Chi Square Value (17.98, β) | 7.855 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 3.206 | 95% Gamma Adjusted KM-UCL (use when n<50) | 3.826 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.746 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.803 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.362 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.304 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 1.666 | Mean in Log Scale | -0.297 |
| SD in Original Scale | 1.393 | SD in Log Scale | 1.736 |
| 95% t UCL (assumes normality of ROS data) | 2.599 | 95% Percentile Bootstrap UCL | 2.438 |
| 95% BCA Bootstrap UCL | 2.415 | 95% Bootstrap t UCL | 2.625 |
| 95% H-UCL (Log ROS) | 115.1 | | |

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -0.213 | KM Geo Mean | 0.808 |
| KM SD (logged) | 1.492 | 95% Critical H Value (KM-Log) | 4.72 |
| KM Standard Error of Mean (logged) | 0.57 | 95% H-UCL (KM -Log) | 35.25 |
| KM SD (logged) | 1.492 | 95% Critical H Value (KM-Log) | 4.72 |
| KM Standard Error of Mean (logged) | 0.57 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 1.666 | Mean in Log Scale | -0.3 |
| SD in Original Scale | 1.393 | SD in Log Scale | 1.741 |
| 95% t UCL (Assumes normality) | 2.599 | 95% H-Stat UCL | 118.4 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (t) UCL | 2.609 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**LEAD**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 8 | Number of Distinct Observations | 8 |
| Number of Detects | 3 | Number of Non-Detects | 5 |
| Number of Distinct Detects | 3 | Number of Distinct Non-Detects | 5 |
| Minimum Detect | 0.054 | Minimum Non-Detect | 0.034 |
| Maximum Detect | 0.094 | Maximum Non-Detect | 0.099 |
| Variance Detects | 4.9633E-4 | Percent Non-Detects | 62.5% |
| Mean Detects | 0.0683 | SD Detects | 0.0223 |
| Median Detects | 0.057 | CV Detects | 0.326 |
| Skewness Detects | 1.697 | Kurtosis Detects | N/A |
| Mean of Logged Detects | -2.716 | SD of Logged Detects | 0.306 |

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.806 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.767 | Detected Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.361 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.425 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| KM Mean | 0.053 | KM Standard Error of Mean | 0.0107 |
| KM SD | 0.0208 | 95% KM (BCA) UCL | N/A |
| 95% KM (t) UCL | 0.0732 | 95% KM (Percentile Bootstrap) UCL | N/A |
| 95% KM (z) UCL | 0.0706 | 95% KM Bootstrap t UCL | N/A |
| 90% KM Chebyshev UCL | 0.0851 | 95% KM Chebyshev UCL | 0.0996 |
| 97.5% KM Chebyshev UCL | 0.12 | 99% KM Chebyshev UCL | 0.159 |

**Gamma GOF Tests on Detected Observations Only**

Not Enough Data to Perform GOF Test

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 15.49 | k star (bias corrected MLE) | N/A |
| Theta hat (MLE) | 0.00441 | Theta star (bias corrected MLE) | N/A |
| nu hat (MLE) | 92.95 | nu star (bias corrected) | N/A |
| Mean (detects) | 0.0683 | | |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.0234 | Mean | 0.048 |
| Maximum | 0.094 | Median | 0.0461 |
| SD | 0.0224 | CV | 0.466 |
| k hat (MLE) | 5.592 | k star (bias corrected MLE) | 3.579 |
| Theta hat (MLE) | 0.00858 | Theta star (bias corrected MLE) | 0.0134 |
| nu hat (MLE) | 89.48 | nu star (bias corrected) | 57.26 |
| Adjusted Level of Significance (β) | 0.0195 | | |
| Approximate Chi Square Value (57.26, α) | 40.86 | Adjusted Chi Square Value (57.26, β) | 37.39 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0673 | 95% Gamma Adjusted UCL (use when n<50) | N/A |

**Estimates of Gamma Parameters using KM Estimates**

| | | | |
|---|---|---|---|
| Mean (KM) | 0.053 | SD (KM) | 0.0208 |
| Variance (KM) | 4.3412E-4 | SE of Mean (KM) | 0.0107 |
| k hat (KM) | 6.46 | k star (KM) | 4.121 |
| nu hat (KM) | 103.4 | nu star (KM) | 65.94 |
| theta hat (KM) | 0.0082 | theta star (KM) | 0.0129 |
| 80% gamma percentile (KM) | 0.0728 | 90% gamma percentile (KM) | 0.0879 |
| 95% gamma percentile (KM) | 0.102 | 99% gamma percentile (KM) | 0.132 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (65.94, α) | 48.25 | Adjusted Chi Square Value (65.94, β) | 44.45 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.0724 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.0786 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.822 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.767 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.353 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.425 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.0513 | Mean in Log Scale | -3.022 |
| SD in Original Scale | 0.0193 | SD in Log Scale | 0.335 |
| 95% t UCL (assumes normality of ROS data) | 0.0643 | 95% Percentile Bootstrap UCL | 0.0627 |
| 95% BCA Bootstrap UCL | 0.0653 | 95% Bootstrap t UCL | 0.0723 |
| 95% H-UCL (Log ROS) | 0.0673 | | |

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -3.008 | KM Geo Mean | 0.0494 |
| KM SD (logged) | 0.365 | 95% Critical H Value (KM-Log) | 2.144 |
| KM Standard Error of Mean (logged) | 0.191 | 95% H-UCL (KM -Log) | 0.071 |
| KM SD (logged) | 0.365 | 95% Critical H Value (KM-Log) | 2.144 |
| KM Standard Error of Mean (logged) | 0.191 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.0478 | Mean in Log Scale | -3.169 |
| SD in Original Scale | 0.0241 | SD in Log Scale | 0.573 |
| 95% t UCL (Assumes normality) | 0.0639 | 95% H-Stat UCL | 0.0849 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (t) UCL | 0.0732 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**4,4'-DDD**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 8 | Number of Distinct Observations | 7 |
| | | Number of Missing Observations | 0 |
| Minimum | 2.2000E-4 | Mean | 7.5500E-4 |
| Maximum | 0.0013 | Median | 6.3500E-4 |
| SD | 4.5046E-4 | Std. Error of Mean | 1.5926E-4 |
| Coefficient of Variation | 0.597 | Skewness | 0.281 |

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.862 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.818 | Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.213 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.283 | Data appear Normal at 5% Significance Level | |

Data appear Normal at 5% Significance Level

**Assuming Normal Distribution**

| 95% Normal UCL | | 95% UCLs (Adjusted for Skewness) | |
|---|---|---|---|
| 95% Student's-t UCL | 0.00106 | 95% Adjusted-CLT UCL (Chen-1995) | 0.00103 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.00106 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.405 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.722 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.226 | **Kolmogorov-Smirnov Gamma GOF Test** | |
| 5% K-S Critical Value | 0.296 | Detected data appear Gamma Distributed at 5% Significance Level | |

**Detected data appear Gamma Distributed at 5% Significance Level**

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 2.886 | k star (bias corrected MLE) | 1.887 |
| Theta hat (MLE) | 2.6161E-4 | Theta star (bias corrected MLE) | 4.0010E-4 |
| nu hat (MLE) | 46.17 | nu star (bias corrected) | 30.19 |
| MLE Mean (bias corrected) | 7.5500E-4 | MLE Sd (bias corrected) | 5.4961E-4 |
| | | Approximate Chi Square Value (0.05) | 18.64 |
| Adjusted Level of Significance | 0.0195 | Adjusted Chi Square Value | 16.39 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 0.00122 | 95% Adjusted Gamma UCL (use when n<50) | 0.00139 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.911 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.818 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.206 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.283 | Data appear Lognormal at 5% Significance Level | |

**Data appear Lognormal at 5% Significance Level**

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -8.422 | Mean of logged Data | -7.372 |
| Maximum of Logged Data | -6.645 | SD of logged Data | 0.675 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.00157 | 90% Chebyshev (MVUE) UCL | 0.00132 |
| 95% Chebyshev (MVUE) UCL | 0.00157 | 97.5% Chebyshev (MVUE) UCL | 0.00192 |
| 99% Chebyshev (MVUE) UCL | 0.00261 | | |

**Nonparametric Distribution Free UCL Statistics**

**Data appear to follow a Discernible Distribution at 5% Significance Level**

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.00102 | 95% Jackknife UCL | 0.00106 |
| 95% Standard Bootstrap UCL | 9.9830E-4 | 95% Bootstrap-t UCL | 0.00109 |
| 95% Hall's Bootstrap UCL | 9.5473E-4 | 95% Percentile Bootstrap UCL | 0.00101 |
| 95% BCA Bootstrap UCL | 9.8750E-4 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.00123 | 95% Chebyshev(Mean, Sd) UCL | 0.00145 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.00175 | 99% Chebyshev(Mean, Sd) UCL | 0.00234 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Student's-t UCL | 0.00106 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**4,4'-DDE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 8 | Number of Distinct Observations | 8 |
| | | Number of Missing Observations | 0 |
| Minimum | 6.1000E-4 | Mean | 0.00179 |
| Maximum | 0.0035 | Median | 0.0015 |
| SD | 0.00102 | Std. Error of Mean | 3.5919E-4 |
| Coefficient of Variation | 0.568 | Skewness | 0.771 |

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.92 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.818 | Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.185 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.283 | Data appear Normal at 5% Significance Level | |

Data appear Normal at 5% Significance Level

**Assuming Normal Distribution**

| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
|---|---|---|---|
| 95% Student's-t UCL | 0.00247 | 95% Adjusted-CLT UCL (Chen-1995) | 0.00248 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.00249 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.208 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.72 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.153 | **Kolmogorov-Smirnov Gamma GOF Test** | |
| 5% K-S Critical Value | 0.296 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 3.592 | k star (bias corrected MLE) | 2.328 |
| Theta hat (MLE) | 4.9796E-4 | Theta star (bias corrected MLE) | 7.6822E-4 |
| nu hat (MLE) | 57.47 | nu star (bias corrected) | 37.25 |
| MLE Mean (bias corrected) | 0.00179 | MLE Sd (bias corrected) | 0.00117 |
| | | Approximate Chi Square Value (0.05) | 24.28 |
| Adjusted Level of Significance | 0.0195 | Adjusted Chi Square Value | 21.67 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 0.00274 | 95% Adjusted Gamma UCL (use when n<50) | 0.00308 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.975 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.818 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.121 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.283 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -7.402 | Mean of logged Data | -6.472 |
| Maximum of Logged Data | -5.655 | SD of logged Data | 0.587 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.0032 | 90% Chebyshev (MVUE) UCL | 0.00292 |
| 95% Chebyshev (MVUE) UCL | 0.00344 | 97.5% Chebyshev (MVUE) UCL | 0.00415 |
| 99% Chebyshev (MVUE) UCL | 0.00554 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.00238 | 95% Jackknife UCL | 0.00247 |
| 95% Standard Bootstrap UCL | 0.00234 | 95% Bootstrap-t UCL | 0.00278 |
| 95% Hall's Bootstrap UCL | 0.00284 | 95% Percentile Bootstrap UCL | 0.00233 |
| 95% BCA Bootstrap UCL | 0.0024 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.00287 | 95% Chebyshev(Mean, Sd) UCL | 0.00335 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.00403 | 99% Chebyshev(Mean, Sd) UCL | 0.00536 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Student's-t UCL | 0.00247 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

AROCLOR-1254

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 8 | Number of Distinct Observations | 8 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.0029 | Mean | 0.00726 |
| Maximum | 0.012 | Median | 0.0074 |
| SD | 0.00264 | Std. Error of Mean | 9.3273E-4 |
| Coefficient of Variation | 0.363 | Skewness | 0.188 |

**Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.**
**For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).**
**Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1**

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.961 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.818 | Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.184 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.283 | Data appear Normal at 5% Significance Level | |

**Data appear Normal at 5% Significance Level**

**Assuming Normal Distribution**

| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
|---|---|---|---|
| 95% Student's-t UCL | 0.00903 | 95% Adjusted-CLT UCL (Chen-1995) | 0.00886 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.00904 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.351 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.717 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.212 | **Kolmogorov-Smirnov Gamma GOF Test** | |
| 5% K-S Critical Value | 0.295 | Detected data appear Gamma Distributed at 5% Significance Level | |

**Detected data appear Gamma Distributed at 5% Significance Level**

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 7.526 | k star (bias corrected MLE) | 4.787 |
| Theta hat (MLE) | 9.6493E-4 | Theta star (bias corrected MLE) | 0.00152 |
| nu hat (MLE) | 120.4 | nu star (bias corrected) | 76.6 |
| MLE Mean (bias corrected) | 0.00726 | MLE Sd (bias corrected) | 0.00332 |
| | | Approximate Chi Square Value (0.05) | 57.44 |
| Adjusted Level of Significance | 0.0195 | Adjusted Chi Square Value | 53.26 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 0.00969 | 95% Adjusted Gamma UCL (use when n<50) | 0.0104 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.91 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.818 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.238 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.283 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -5.843 | Mean of logged Data | -4.993 |
| Maximum of Logged Data | -4.423 | SD of logged Data | 0.417 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.0105 | 90% Chebyshev (MVUE) UCL | 0.0106 |
| 95% Chebyshev (MVUE) UCL | 0.0121 | 97.5% Chebyshev (MVUE) UCL | 0.0141 |
| 99% Chebyshev (MVUE) UCL | 0.0181 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.0088 | 95% Jackknife UCL | 0.00903 |
| 95% Standard Bootstrap UCL | 0.00868 | 95% Bootstrap-t UCL | 0.00909 |
| 95% Hall's Bootstrap UCL | 0.00946 | 95% Percentile Bootstrap UCL | 0.00863 |
| 95% BCA Bootstrap UCL | 0.00879 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.0101 | 95% Chebyshev(Mean, Sd) UCL | 0.0113 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.0131 | 99% Chebyshev(Mean, Sd) UCL | 0.0165 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Student's-t UCL | 0.00903 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**AROCLOR-1260**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 8 | Number of Distinct Observations | 8 |
| Number of Detects | 7 | Number of Non-Detects | 1 |
| Number of Distinct Detects | 7 | Number of Distinct Non-Detects | 1 |
| Minimum Detect | 0.0024 | Minimum Non-Detect | 0.0031 |
| Maximum Detect | 0.0095 | Maximum Non-Detect | 0.0031 |
| Variance Detects | 6.4824E-6 | Percent Non-Detects | 12.5% |
| Mean Detects | 0.00403 | SD Detects | 0.00255 |
| Median Detects | 0.0028 | CV Detects | 0.632 |
| Skewness Detects | 2.157 | Kurtosis Detects | 4.743 |
| Mean of Logged Detects | -5.637 | SD of Logged Detects | 0.49 |

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.693 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.803 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.312 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.304 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| KM Mean | 0.00385 | KM Standard Error of Mean | 8.6101E-4 |
| KM SD | 0.00225 | 95% KM (BCA) UCL | 0.00539 |
| 95% KM (t) UCL | 0.00548 | 95% KM (Percentile Bootstrap) UCL | 0.00528 |
| 95% KM (z) UCL | 0.00527 | 95% KM Bootstrap t UCL | 0.0122 |
| 90% KM Chebyshev UCL | 0.00644 | 95% KM Chebyshev UCL | 0.00761 |
| 97.5% KM Chebyshev UCL | 0.00923 | 99% KM Chebyshev UCL | 0.0124 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.813 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.71 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.284 | **Kolmogorov-Smirnov GOF** | |
| 5% K-S Critical Value | 0.313 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data follow Appr. Gamma Distribution at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 4.247 | k star (bias corrected MLE) | 2.522 |
| Theta hat (MLE) | 9.4864E-4 | Theta star (bias corrected MLE) | 0.0016 |
| nu hat (MLE) | 59.45 | nu star (bias corrected) | 35.31 |
| Mean (detects) | 0.00403 | | |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.0024 | Mean | 0.00478 |
| Maximum | 0.01 | Median | 0.0031 |
| SD | 0.00316 | CV | 0.663 |
| k hat (MLE) | 3.217 | k star (bias corrected MLE) | 2.094 |
| Theta hat (MLE) | 0.00148 | Theta star (bias corrected MLE) | 0.00228 |
| nu hat (MLE) | 51.48 | nu star (bias corrected) | 33.51 |
| Adjusted Level of Significance (β) | 0.0195 | | |
| Approximate Chi Square Value (33.51, α) | 21.27 | Adjusted Chi Square Value (33.51, β) | 18.84 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.00752 | 95% Gamma Adjusted UCL (use when n<50) | 0.00849 |

**Estimates of Gamma Parameters using KM Estimates**

| | | | |
|---|---|---|---|
| Mean (KM) | 0.00385 | SD (KM) | 0.00225 |
| Variance (KM) | 5.0800E-6 | SE of Mean (KM) | 8.6101E-4 |
| k hat (KM) | 2.923 | k star (KM) | 1.91 |
| nu hat (KM) | 46.76 | nu star (KM) | 30.56 |
| theta hat (KM) | 0.00132 | theta star (KM) | 0.00202 |
| 80% gamma percentile (KM) | 0.0058 | 90% gamma percentile (KM) | 0.00758 |
| 95% gamma percentile (KM) | 0.00927 | 99% gamma percentile (KM) | 0.0131 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (30.56, α) | 18.93 | Adjusted Chi Square Value (30.56, β) | 16.66 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.00622 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.00707 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.802 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.803 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.26 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.304 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Approximate Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.00386 | Mean in Log Scale | -5.672 |
| SD in Original Scale | 0.0024 | SD in Log Scale | 0.465 |
| 95% t UCL (assumes normality of ROS data) | 0.00547 | 95% Percentile Bootstrap UCL | 0.00536 |
| 95% BCA Bootstrap UCL | 0.00611 | 95% Bootstrap t UCL | 0.0127 |
| 95% H-UCL (Log ROS) | 0.00574 | | |

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -5.675 | KM Geo Mean | 0.00343 |
| KM SD (logged) | 0.437 | 95% Critical H Value (KM-Log) | 2.252 |
| KM Standard Error of Mean (logged) | 0.167 | 95% H-UCL (KM -Log) | 0.00548 |
| KM SD (logged) | 0.437 | 95% Critical H Value (KM-Log) | 2.252 |
| KM Standard Error of Mean (logged) | 0.167 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.00372 | Mean in Log Scale | -5.741 |
| SD in Original Scale | 0.00251 | SD in Log Scale | 0.541 |
| 95% t UCL (Assumes normality) | 0.0054 | 95% H-Stat UCL | 0.00611 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM Adjusted Gamma UCL | 0.00707 | 95% GROS Adjusted Gamma UCL | 0.00849 |

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test

When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

| Analyte | Valid Obs | Rec. UCL | Method | Max | UCL>Max |
|---|---|---|---|---|---|
| ARSENIC | 5 | 0.10 | 95% KM (t) UCL | 0.11 | |
| CHROMIUM | 5 | 0.43 | 95% KM (t) UCL | 0.46 | |
| LEAD | 5 | 0.40 | 95% KM (t) UCL | 0.58 | |
| 4,4'-DDD | 5 | 0.0013 | 95% KM (t) UCL | 0.0014 | |
| 4,4'-DDE | 5 | 0.0049 | 95% Student's-t UCL | 0.0053 | |
| AROCLOR-1254 | 5 | 0.014 | 95% Student's-t UCL | 0.016 | |
| AROCLOR-1260 | 5 | 0.013 | 95% Student's-t UCL | 0.014 | |

Sunfish_output.xlsx

## UCL Statistics for Data Sets with Non-Detects

| User Selected Options | |
|---|---|
| Date/Time of Computation | ProUCL 5.17/17/2018 16:19:53 |
| From File | ProUCL_Fish_f.xls |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Number of Bootstrap Operations | 2000 |

## ARSENIC

### General Statistics

| | | | |
|---|---|---|---|
| Total Number of Observations | 5 | Number of Distinct Observations | 4 |
| Number of Detects | 4 | Number of Non-Detects | 1 |
| Number of Distinct Detects | 4 | Number of Distinct Non-Detects | 1 |
| Minimum Detect | 0.051 | Minimum Non-Detect | 0.051 |
| Maximum Detect | 0.11 | Maximum Non-Detect | 0.051 |
| Variance Detects | 8.7492E-4 | Percent Non-Detects | 20% |
| Mean Detects | 0.0798 | SD Detects | 0.0296 |
| Median Detects | 0.079 | CV Detects | 0.371 |
| Skewness Detects | 0.0498 | Kurtosis Detects | -5.172 |
| Mean of Logged Detects | -2.583 | SD of Logged Detects | 0.385 |

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

### Normal GOF Test on Detects Only

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.863 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.748 | Detected Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.269 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.375 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Normal at 5% Significance Level

### Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

| | | | |
|---|---|---|---|
| KM Mean | 0.074 | KM Standard Error of Mean | 0.0132 |
| KM SD | 0.0256 | 95% KM (BCA) UCL | N/A |
| 95% KM (t) UCL | 0.102 | 95% KM (Percentile Bootstrap) UCL | N/A |
| 95% KM (z) UCL | 0.0958 | 95% KM Bootstrap t UCL | N/A |
| 90% KM Chebyshev UCL | 0.114 | 95% KM Chebyshev UCL | 0.132 |
| 97.5% KM Chebyshev UCL | 0.157 | 99% KM Chebyshev UCL | 0.206 |

### Gamma GOF Tests on Detected Observations Only

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.453 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.657 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.296 | **Kolmogorov-Smirnov GOF** | |
| 5% K-S Critical Value | 0.395 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 9.352 | k star (bias corrected MLE) | 2.505 |
| Theta hat (MLE) | 0.00853 | Theta star (bias corrected MLE) | 0.0318 |
| nu hat (MLE) | 74.82 | nu star (bias corrected) | 20.04 |
| Mean (detects) | 0.0798 | | |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.0154 | Mean | 0.0669 |
| Maximum | 0.11 | Median | 0.058 |
| SD | 0.0385 | CV | 0.576 |
| k hat (MLE) | 2.698 | k star (bias corrected MLE) | 1.213 |
| Theta hat (MLE) | 0.0248 | Theta star (bias corrected MLE) | 0.0552 |
| nu hat (MLE) | 26.98 | nu star (bias corrected) | 12.13 |
| Adjusted Level of Significance (β) | 0.0086 | | |
| Approximate Chi Square Value (12.13, α) | 5.31 | Adjusted Chi Square Value (12.13, β) | 3.522 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.153 | 95% Gamma Adjusted UCL (use when n<50) | N/A |

**Estimates of Gamma Parameters using KM Estimates**

| | | | |
|---|---|---|---|
| Mean (KM) | 0.074 | SD (KM) | 0.0256 |
| Variance (KM) | 6.5720E-4 | SE of Mean (KM) | 0.0132 |
| k hat (KM) | 8.332 | k star (KM) | 3.466 |
| nu hat (KM) | 83.32 | nu star (KM) | 34.66 |
| theta hat (KM) | 0.00888 | theta star (KM) | 0.0213 |
| 80% gamma percentile (KM) | 0.104 | 90% gamma percentile (KM) | 0.127 |
| 95% gamma percentile (KM) | 0.149 | 99% gamma percentile (KM) | 0.196 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (34.66, α) | 22.19 | Adjusted Chi Square Value (34.66, β) | 17.97 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.116 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.143 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.864 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.748 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.267 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.375 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.0694 | Mean in Log Scale | -2.781 |
| SD in Original Scale | 0.0345 | SD in Log Scale | 0.553 |
| 95% t UCL (assumes normality of ROS data) | 0.102 | 95% Percentile Bootstrap UCL | 0.0942 |
| 95% BCA Bootstrap UCL | 0.0916 | 95% Bootstrap t UCL | 0.125 |
| 95% H-UCL (Log ROS) | 0.171 | | |

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -2.662 | KM Geo Mean | 0.0698 |
| KM SD (logged) | 0.337 | 95% Critical H Value (KM-Log) | 2.489 |
| KM Standard Error of Mean (logged) | 0.174 | 95% H-UCL (KM -Log) | 0.112 |
| KM SD (logged) | 0.337 | 95% Critical H Value (KM-Log) | 2.489 |
| KM Standard Error of Mean (logged) | 0.174 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.0689 | Mean in Log Scale | -2.8 |
| SD in Original Scale | 0.0353 | SD in Log Scale | 0.589 |
| 95% t UCL (Assumes normality) | 0.103 | 95% H-Stat UCL | 0.188 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (t) UCL | 0.102 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**CHROMIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 5 | Number of Distinct Observations | 4 |
| Number of Detects | 4 | Number of Non-Detects | 1 |
| Number of Distinct Detects | 3 | Number of Distinct Non-Detects | 1 |
| Minimum Detect | 0.28 | Minimum Non-Detect | 0.09 |
| Maximum Detect | 0.46 | Maximum Non-Detect | 0.09 |
| Variance Detects | 0.00593 | Percent Non-Detects | 20% |
| Mean Detects | 0.35 | SD Detects | 0.077 |
| Median Detects | 0.33 | CV Detects | 0.22 |
| Skewness Detects | 1.418 | Kurtosis Detects | 2.667 |
| Mean of Logged Detects | -1.067 | SD of Logged Detects | 0.208 |

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.86 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.748 | Detected Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.352 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.375 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| KM Mean | 0.298 | KM Standard Error of Mean | 0.0619 |
| KM SD | 0.12 | 95% KM (BCA) UCL | N/A |
| 95% KM (t) UCL | 0.43 | 95% KM (Percentile Bootstrap) UCL | N/A |
| 95% KM (z) UCL | 0.4 | 95% KM Bootstrap t UCL | N/A |
| 90% KM Chebyshev UCL | 0.484 | 95% KM Chebyshev UCL | 0.568 |
| 97.5% KM Chebyshev UCL | 0.685 | 99% KM Chebyshev UCL | 0.914 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.442 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.657 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.351 | **Kolmogorov-Smirnov GOF** | |
| 5% K-S Critical Value | 0.394 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 29.78 | k star (bias corrected MLE) | 7.612 |
| Theta hat (MLE) | 0.0118 | Theta star (bias corrected MLE) | 0.046 |
| nu hat (MLE) | 238.3 | nu star (bias corrected) | 60.9 |
| Mean (detects) | 0.35 | | |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.172 | Mean | 0.314 |
| Maximum | 0.46 | Median | 0.33 |
| SD | 0.104 | CV | 0.33 |
| k hat (MLE) | 10.5 | k star (bias corrected MLE) | 4.334 |
| Theta hat (MLE) | 0.0299 | Theta star (bias corrected MLE) | 0.0725 |
| nu hat (MLE) | 105 | nu star (bias corrected) | 43.34 |
| Adjusted Level of Significance (β) | 0.0086 | | |
| Approximate Chi Square Value (43.34, α) | 29.24 | Adjusted Chi Square Value (43.34, β) | 24.3 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.466 | 95% Gamma Adjusted UCL (use when n<50) | N/A |

**Estimates of Gamma Parameters using KM Estimates**

| | | | |
|---|---|---|---|
| Mean (KM) | 0.298 | SD (KM) | 0.12 |
| Variance (KM) | 0.0144 | SE of Mean (KM) | 0.0619 |
| k hat (KM) | 6.177 | k star (KM) | 2.604 |
| nu hat (KM) | 61.77 | nu star (KM) | 26.04 |
| theta hat (KM) | 0.0482 | theta star (KM) | 0.114 |
| 80% gamma percentile (KM) | 0.432 | 90% gamma percentile (KM) | 0.545 |
| 95% gamma percentile (KM) | 0.652 | 99% gamma percentile (KM) | 0.884 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (26.04, α) | 15.41 | Adjusted Chi Square Value (26.04, β) | 11.99 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.504 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.647 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.893 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.748 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.33 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.375 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.32 | Mean in Log Scale | -1.173 |
| SD in Original Scale | 0.0939 | SD in Log Scale | 0.299 |
| 95% t UCL (assumes normality of ROS data) | 0.41 | 95% Percentile Bootstrap UCL | N/A |
| 95% BCA Bootstrap UCL | N/A | 95% Bootstrap t UCL | N/A |
| 95% H-UCL (Log ROS) | 0.463 | | |

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -1.335 | KM Geo Mean | 0.263 |
| KM SD (logged) | 0.56 | 95% Critical H Value (KM-Log) | 3.147 |
| KM Standard Error of Mean (logged) | 0.289 | 95% H-UCL (KM -Log) | 0.743 |
| KM SD (logged) | 0.56 | 95% Critical H Value (KM-Log) | 3.147 |
| KM Standard Error of Mean (logged) | 0.289 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.289 | Mean in Log Scale | -1.474 |
| SD in Original Scale | 0.152 | SD in Log Scale | 0.928 |
| 95% t UCL (Assumes normality) | 0.434 | 95% H-Stat UCL | 2.966 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (t) UCL | 0.43 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**LEAD**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 5 | Number of Distinct Observations | 5 |
| Number of Detects | 4 | Number of Non-Detects | 1 |
| Number of Distinct Detects | 4 | Number of Distinct Non-Detects | 1 |
| Minimum Detect | 0.04 | Minimum Non-Detect | 0.036 |
| Maximum Detect | 0.58 | Maximum Non-Detect | 0.036 |
| Variance Detects | 0.0622 | Percent Non-Detects | 20% |
| Mean Detects | 0.212 | SD Detects | 0.249 |
| Median Detects | 0.115 | CV Detects | 1.175 |
| Skewness Detects | 1.807 | Kurtosis Detects | 3.312 |
| Mean of Logged Detects | -2.05 | SD of Logged Detects | 1.139 |

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.786 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.748 | Detected Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.349 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.375 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| KM Mean | 0.177 | KM Standard Error of Mean | 0.106 |
| KM SD | 0.206 | 95% KM (BCA) UCL | N/A |
| 95% KM (t) UCL | 0.403 | 95% KM (Percentile Bootstrap) UCL | N/A |
| 95% KM (z) UCL | 0.352 | 95% KM Bootstrap t UCL | N/A |
| 90% KM Chebyshev UCL | 0.496 | 95% KM Chebyshev UCL | 0.64 |
| 97.5% KM Chebyshev UCL | 0.84 | 99% KM Chebyshev UCL | 1.233 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.334 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.665 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.261 | **Kolmogorov-Smirnov GOF** | |
| 5% K-S Critical Value | 0.402 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.138 | k star (bias corrected MLE) | 0.451 |
| Theta hat (MLE) | 0.186 | Theta star (bias corrected MLE) | 0.47 |
| nu hat (MLE) | 9.106 | nu star (bias corrected) | 3.61 |
| Mean (detects) | 0.212 | | |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 0.172 |
| Maximum | 0.58 | Median | 0.079 |
| SD | 0.234 | CV | 1.363 |
| k hat (MLE) | 0.749 | k star (bias corrected MLE) | 0.433 |
| Theta hat (MLE) | 0.229 | Theta star (bias corrected MLE) | 0.397 |
| nu hat (MLE) | 7.49 | nu star (bias corrected) | 4.329 |
| Adjusted Level of Significance (β) | 0.0086 | | |
| Approximate Chi Square Value (4.33, α) | 0.856 | Adjusted Chi Square Value (4.33, β) | 0.368 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.869 | 95% Gamma Adjusted UCL (use when n<50) | N/A |

**Estimates of Gamma Parameters using KM Estimates**

| | | | |
|---|---|---|---|
| Mean (KM) | 0.177 | SD (KM) | 0.206 |
| Variance (KM) | 0.0423 | SE of Mean (KM) | 0.106 |
| k hat (KM) | 0.741 | k star (KM) | 0.43 |
| nu hat (KM) | 7.41 | nu star (KM) | 4.297 |
| theta hat (KM) | 0.239 | theta star (KM) | 0.412 |
| 80% gamma percentile (KM) | 0.288 | 90% gamma percentile (KM) | 0.493 |
| 95% gamma percentile (KM) | 0.717 | 99% gamma percentile (KM) | 1.276 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (4.30, α) | 0.843 | Adjusted Chi Square Value (4.30, β) | 0.36 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.903 | 95% Gamma Adjusted KM-UCL (use when n<50) | 2.11 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.972 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.748 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.197 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.375 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.171 | Mean in Log Scale | -2.662 |
| SD in Original Scale | 0.235 | SD in Log Scale | 1.688 |
| 95% t UCL (assumes normality of ROS data) | 0.395 | 95% Percentile Bootstrap UCL | 0.365 |
| 95% BCA Bootstrap UCL | 0.386 | 95% Bootstrap t UCL | 1.101 |
| 95% H-UCL (Log ROS) | 242.5 | | |

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -2.305 | KM Geo Mean | 0.0998 |
| KM SD (logged) | 1.019 | 95% Critical H Value (KM-Log) | 4.988 |
| KM Standard Error of Mean (logged) | 0.526 | 95% H-UCL (KM -Log) | 2.13 |
| KM SD (logged) | 1.019 | 95% Critical H Value (KM-Log) | 4.988 |
| KM Standard Error of Mean (logged) | 0.526 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.173 | Mean in Log Scale | -2.443 |
| SD in Original Scale | 0.233 | SD in Log Scale | 1.322 |
| 95% t UCL (Assumes normality) | 0.395 | 95% H-Stat UCL | 13.59 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (t) UCL | 0.403 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**4,4'-DDD**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 5 | Number of Distinct Observations | 4 |
| Number of Detects | 4 | Number of Non-Detects | 1 |
| Number of Distinct Detects | 3 | Number of Distinct Non-Detects | 1 |
| Minimum Detect | 8.6000E-4 | Minimum Non-Detect | 3.4000E-4 |
| Maximum Detect | 0.0014 | Maximum Non-Detect | 3.4000E-4 |
| Variance Detects | 6.7800E-8 | Percent Non-Detects | 20% |
| Mean Detects | 0.00101 | SD Detects | 2.6038E-4 |
| Median Detects | 8.9000E-4 | CV Detects | 0.258 |
| Skewness Detects | 1.982 | Kurtosis Detects | 3.943 |
| Mean of Logged Detects | -6.92 | SD of Logged Detects | 0.233 |

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.677 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.748 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.428 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.375 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| KM Mean | 8.7600E-4 | KM Standard Error of Mean | 1.7321E-4 |
| KM SD | 3.3542E-4 | 95% KM (BCA) UCL | N/A |
| 95% KM (t) UCL | 0.00125 | 95% KM (Percentile Bootstrap) UCL | N/A |
| 95% KM (z) UCL | 0.00116 | 95% KM Bootstrap t UCL | N/A |
| 90% KM Chebyshev UCL | 0.0014 | 95% KM Chebyshev UCL | 0.00163 |
| 97.5% KM Chebyshev UCL | 0.00196 | 99% KM Chebyshev UCL | 0.0026 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.836 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.657 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.45 | **Kolmogorov-Smirnov GOF** | |
| 5% K-S Critical Value | 0.394 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 23.1 | k star (bias corrected MLE) | 5.941 |
| Theta hat (MLE) | 4.3730E-5 | Theta star (bias corrected MLE) | 1.7001E-4 |
| nu hat (MLE) | 184.8 | nu star (bias corrected) | 47.53 |
| Mean (detects) | 0.00101 | | |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 8.6000E-4 | Mean | 0.00281 |
| Maximum | 0.01 | Median | 8.9000E-4 |
| SD | 0.00403 | CV | 1.434 |
| k hat (MLE) | 0.993 | k star (bias corrected MLE) | 0.531 |
| Theta hat (MLE) | 0.00283 | Theta star (bias corrected MLE) | 0.00529 |
| nu hat (MLE) | 9.935 | nu star (bias corrected) | 5.307 |
| Adjusted Level of Significance (β) | 0.0086 | | |
| Approximate Chi Square Value (5.31, α) | 1.297 | Adjusted Chi Square Value (5.31, β) | 0.621 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0115 | 95% Gamma Adjusted UCL (use when n<50) | N/A |

**Estimates of Gamma Parameters using KM Estimates**

| | | | |
|---|---|---|---|
| Mean (KM) | 8.7600E-4 | SD (KM) | 3.3542E-4 |
| Variance (KM) | 1.1250E-7 | SE of Mean (KM) | 1.7321E-4 |
| k hat (KM) | 6.821 | k star (KM) | 2.862 |
| nu hat (KM) | 68.21 | nu star (KM) | 28.62 |
| theta hat (KM) | 1.2843E-4 | theta star (KM) | 3.0611E-4 |
| 80% gamma percentile (KM) | 0.00126 | 90% gamma percentile (KM) | 0.00157 |
| 95% gamma percentile (KM) | 0.00186 | 99% gamma percentile (KM) | 0.0025 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (28.62, α) | 17.41 | Adjusted Chi Square Value (28.62, β) | 13.73 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.00144 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.00183 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.69 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.748 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.424 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.375 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 9.2389E-4 | Mean in Log Scale | -7.026 |
| SD in Original Scale | 2.9652E-4 | SD in Log Scale | 0.312 |
| 95% t UCL (assumes normality of ROS data) | 0.00121 | 95% Percentile Bootstrap UCL | N/A |
| 95% BCA Bootstrap UCL | N/A | 95% Bootstrap t UCL | N/A |
| 95% H-UCL (Log ROS) | 0.00136 | | |

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -7.133 | KM Geo Mean | 7.9832E-4 |
| KM SD (logged) | 0.463 | 95% Critical H Value (KM-Log) | 2.833 |
| KM Standard Error of Mean (logged) | 0.239 | 95% H-UCL (KM -Log) | 0.00171 |
| KM SD (logged) | 0.463 | 95% Critical H Value (KM-Log) | 2.833 |
| KM Standard Error of Mean (logged) | 0.239 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 8.4200E-4 | Mean in Log Scale | -7.272 |
| SD in Original Scale | 4.3814E-4 | SD in Log Scale | 0.813 |
| 95% t UCL (Assumes normality) | 0.00126 | 95% H-Stat UCL | 0.00514 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM (t) UCL | 0.00125 | KM H-UCL | 0.00171 |
| 95% KM (BCA) UCL | N/A | | |

**Warning: One or more Recommended UCL(s) not available!**

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**4,4'-DDE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 5 | Number of Distinct Observations | 5 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.0013 | Mean | 0.00352 |
| Maximum | 0.0053 | Median | 0.0036 |
| SD | 0.00146 | Std. Error of Mean | 6.5146E-4 |
| Coefficient of Variation | 0.414 | Skewness | -0.69 |

**Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.**
**For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).**
**Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1**

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.958 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.762 | Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.24 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.343 | Data appear Normal at 5% Significance Level | |

**Data appear Normal at 5% Significance Level**

**Assuming Normal Distribution**

| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
|---|---|---|---|
| 95% Student's-t UCL | 0.00491 | 95% Adjusted-CLT UCL (Chen-1995) | 0.00438 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.00488 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.413 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.681 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.298 | **Kolmogorov-Smirnov Gamma GOF Test** | |
| 5% K-S Critical Value | 0.358 | Detected data appear Gamma Distributed at 5% Significance Level | |

**Detected data appear Gamma Distributed at 5% Significance Level**

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 5.409 | k star (bias corrected MLE) | 2.297 |
| Theta hat (MLE) | 6.5077E-4 | Theta star (bias corrected MLE) | 0.00153 |
| nu hat (MLE) | 54.09 | nu star (bias corrected) | 22.97 |
| MLE Mean (bias corrected) | 0.00352 | MLE Sd (bias corrected) | 0.00232 |
| | | Approximate Chi Square Value (0.05) | 13.07 |
| Adjusted Level of Significance | 0.0086 | Adjusted Chi Square Value | 9.961 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 0.00619 | 95% Adjusted Gamma UCL (use when n<50) | 0.00812 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.852 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.762 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.323 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.343 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -6.645 | Mean of logged Data | -5.745 |
| Maximum of Logged Data | -5.24 | SD of logged Data | 0.534 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.00836 | 90% Chebyshev (MVUE) UCL | 0.00612 |
| 95% Chebyshev (MVUE) UCL | 0.00727 | 97.5% Chebyshev (MVUE) UCL | 0.00887 |
| 99% Chebyshev (MVUE) UCL | 0.012 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.00459 | 95% Jackknife UCL | 0.00491 |
| 95% Standard Bootstrap UCL | 0.00444 | 95% Bootstrap-t UCL | 0.0046 |
| 95% Hall's Bootstrap UCL | 0.00448 | 95% Percentile Bootstrap UCL | 0.00442 |
| 95% BCA Bootstrap UCL | 0.00432 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.00547 | 95% Chebyshev(Mean, Sd) UCL | 0.00636 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.00759 | 99% Chebyshev(Mean, Sd) UCL | 0.01 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Student's-t UCL | 0.00491 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.**

AROCLOR-1254

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 5 | Number of Distinct Observations | 5 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.0031 | Mean | 0.00922 |
| Maximum | 0.016 | Median | 0.0093 |
| SD | 0.00543 | Std. Error of Mean | 0.00243 |
| Coefficient of Variation | 0.589 | Skewness | 0.114 |

**Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.**
**For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).**
**Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1**

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.947 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.762 | Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.197 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.343 | Data appear Normal at 5% Significance Level | |

**Data appear Normal at 5% Significance Level**

**Assuming Normal Distribution**

| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
|---|---|---|---|
| 95% Student's-t UCL | 0.0144 | 95% Adjusted-CLT UCL (Chen-1995) | 0.0134 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.0144 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.276 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.683 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.205 | **Kolmogorov-Smirnov Gamma GOF Test** | |
| 5% K-S Critical Value | 0.359 | Detected data appear Gamma Distributed at 5% Significance Level | |

**Detected data appear Gamma Distributed at 5% Significance Level**

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 3.062 | k star (bias corrected MLE) | 1.358 |
| Theta hat (MLE) | 0.00301 | Theta star (bias corrected MLE) | 0.00679 |
| nu hat (MLE) | 30.62 | nu star (bias corrected) | 13.58 |
| MLE Mean (bias corrected) | 0.00922 | MLE Sd (bias corrected) | 0.00791 |
| | | Approximate Chi Square Value (0.05) | 6.287 |
| Adjusted Level of Significance | 0.0086 | Adjusted Chi Square Value | 4.297 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 0.0199 | 95% Adjusted Gamma UCL (use when n<50) | 0.0291 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.932 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.762 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.203 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.343 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -5.776 | Mean of logged Data | -4.858 |
| Maximum of Logged Data | -4.135 | SD of logged Data | 0.692 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.0347 | 90% Chebyshev (MVUE) UCL | 0.0179 |
| 95% Chebyshev (MVUE) UCL | 0.0217 | 97.5% Chebyshev (MVUE) UCL | 0.0271 |
| 99% Chebyshev (MVUE) UCL | 0.0376 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.0132 | 95% Jackknife UCL | 0.0144 |
| 95% Standard Bootstrap UCL | 0.0129 | 95% Bootstrap-t UCL | 0.015 |
| 95% Hall's Bootstrap UCL | 0.0122 | 95% Percentile Bootstrap UCL | 0.0127 |
| 95% BCA Bootstrap UCL | 0.0128 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.0165 | 95% Chebyshev(Mean, Sd) UCL | 0.0198 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.0244 | 99% Chebyshev(Mean, Sd) UCL | 0.0334 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Student's-t UCL | 0.0144 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

AROCLOR-1260

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 5 | Number of Distinct Observations | 5 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.0023 | Mean | 0.00798 |
| Maximum | 0.014 | Median | 0.0086 |
| SD | 0.00484 | Std. Error of Mean | 0.00217 |
| Coefficient of Variation | 0.607 | Skewness | -0.00127 |

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.955 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.762 | Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.194 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.343 | Data appear Normal at 5% Significance Level | |

Data appear Normal at 5% Significance Level

**Assuming Normal Distribution**

| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
|---|---|---|---|
| 95% Student's-t UCL | 0.0126 | 95% Adjusted-CLT UCL (Chen-1995) | 0.0115 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.0126 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.288 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.683 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.228 | **Kolmogorov-Smirnov Gamma GOF Test** | |
| 5% K-S Critical Value | 0.36 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 2.715 | k star (bias corrected MLE) | 1.219 |
| Theta hat (MLE) | 0.00294 | Theta star (bias corrected MLE) | 0.00655 |
| nu hat (MLE) | 27.15 | nu star (bias corrected) | 12.19 |
| MLE Mean (bias corrected) | 0.00798 | MLE Sd (bias corrected) | 0.00723 |
| | | Approximate Chi Square Value (0.05) | 5.354 |
| Adjusted Level of Significance | 0.0086 | Adjusted Chi Square Value | 3.556 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 0.0182 | 95% Adjusted Gamma UCL (use when n<50) | 0.0274 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.924 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.762 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.24 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.343 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -6.075 | Mean of logged Data | -5.026 |
| Maximum of Logged Data | -4.269 | SD of logged Data | 0.751 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.0372 | 90% Chebyshev (MVUE) UCL | 0.0162 |
| 95% Chebyshev (MVUE) UCL | 0.0199 | 97.5% Chebyshev (MVUE) UCL | 0.0249 |
| 99% Chebyshev (MVUE) UCL | 0.0349 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.0115 | 95% Jackknife UCL | 0.0126 |
| 95% Standard Bootstrap UCL | 0.0112 | 95% Bootstrap-t UCL | 0.0122 |
| 95% Hall's Bootstrap UCL | 0.0109 | 95% Percentile Bootstrap UCL | 0.0112 |
| 95% BCA Bootstrap UCL | 0.0111 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.0145 | 95% Chebyshev(Mean, Sd) UCL | 0.0174 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.0215 | 99% Chebyshev(Mean, Sd) UCL | 0.0295 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Student's-t UCL | 0.0126 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.**

| Analyte | Valid Obs | Rec. UCL | Method | Max | UCL>Max |
|---|---|---|---|---|---|
| ARSENIC | 28 | 0.12 | 95% KM (t) UCL | 0.23 | |
| CHROMIUM | 28 | 4.6 | 95% KM (Chebyshev) UCL | 15 | |
| LEAD | 28 | 0.15 | KM H-UCL | 1 | |
| 4,4'-DDD | 28 | 0.015 | Gamma Adjusted KM-UCL (use when k<=1 and 15 < n < 50 but k<=1) | 0.042 | |
| 4,4'-DDE | 28 | 0.022 | 95% Adjusted Gamma UCL | 0.063 | |
| AROCLOR-1254 | 28 | 0.060 | 95% Adjusted Gamma UCL | 0.16 | |
| AROCLOR-1260 | 28 | 0.032 | 95% KM Adjusted Gamma UCL | 0.066 | |

BenthicOmnivore_output.xlsx

## UCL Statistics for Data Sets with Non-Detects

| User Selected Options | |
|---|---|
| Date/Time of Computation | ProUCL 5.17/17/2018 16:21:40 |
| From File | ProUCL_Fish_b.xls |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Number of Bootstrap Operations | 2000 |

## ARSENIC

### General Statistics

| | | | |
|---|---|---|---|
| Total Number of Observations | 28 | Number of Distinct Observations | 18 |
| Number of Detects | 20 | Number of Non-Detects | 8 |
| Number of Distinct Detects | 15 | Number of Distinct Non-Detects | 5 |
| Minimum Detect | 0.051 | Minimum Non-Detect | 0.16 |
| Maximum Detect | 0.23 | Maximum Non-Detect | 0.2 |
| Variance Detects | 0.00261 | Percent Non-Detects | 28.57% |
| Mean Detects | 0.108 | SD Detects | 0.0511 |
| Median Detects | 0.101 | CV Detects | 0.474 |
| Skewness Detects | 0.749 | Kurtosis Detects | 0.0224 |
| Mean of Logged Detects | -2.333 | SD of Logged Detects | 0.478 |

### Normal GOF Test on Detects Only

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.911 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.905 | Detected Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.14 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.192 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Normal at 5% Significance Level

### Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

| | | | |
|---|---|---|---|
| KM Mean | 0.104 | KM Standard Error of Mean | 0.0101 |
| KM SD | 0.0469 | 95% KM (BCA) UCL | 0.12 |
| 95% KM (t) UCL | 0.121 | 95% KM (Percentile Bootstrap) UCL | 0.121 |
| 95% KM (z) UCL | 0.121 | 95% KM Bootstrap t UCL | 0.123 |
| 90% KM Chebyshev UCL | 0.134 | 95% KM Chebyshev UCL | 0.148 |
| 97.5% KM Chebyshev UCL | 0.167 | 99% KM Chebyshev UCL | 0.205 |

### Gamma GOF Tests on Detected Observations Only

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.531 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.745 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.167 | **Kolmogorov-Smirnov GOF** | |
| 5% K-S Critical Value | 0.194 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 4.842 | k star (bias corrected MLE) | 4.149 |
| Theta hat (MLE) | 0.0223 | Theta star (bias corrected MLE) | 0.026 |
| nu hat (MLE) | 193.7 | nu star (bias corrected) | 166 |
| Mean (detects) | 0.108 | | |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.051 | Mean | 0.103 |
| Maximum | 0.23 | Median | 0.0937 |
| SD | 0.0443 | CV | 0.429 |
| k hat (MLE) | 6.193 | k star (bias corrected MLE) | 5.553 |
| Theta hat (MLE) | 0.0167 | Theta star (bias corrected MLE) | 0.0186 |
| nu hat (MLE) | 346.8 | nu star (bias corrected) | 311 |
| Adjusted Level of Significance (β) | 0.0404 | | |
| Approximate Chi Square Value (310.99, α) | 271.1 | Adjusted Chi Square Value (310.99, β) | 268.8 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.119 | 95% Gamma Adjusted UCL (use when n<50) | 0.12 |

**Estimates of Gamma Parameters using KM Estimates**

| | | | |
|---|---|---|---|
| Mean (KM) | 0.104 | SD (KM) | 0.0469 |
| Variance (KM) | 0.0022 | SE of Mean (KM) | 0.0101 |
| k hat (KM) | 4.925 | k star (KM) | 4.421 |
| nu hat (KM) | 275.8 | nu star (KM) | 247.6 |
| theta hat (KM) | 0.0211 | theta star (KM) | 0.0235 |
| 80% gamma percentile (KM) | 0.142 | 90% gamma percentile (KM) | 0.17 |
| 95% gamma percentile (KM) | 0.196 | 99% gamma percentile (KM) | 0.252 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (247.58, α) | 212.2 | Adjusted Chi Square Value (247.58, β) | 210.1 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.121 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.123 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.924 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.905 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.167 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.192 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.102 | Mean in Log Scale | -2.362 |
| SD in Original Scale | 0.0444 | SD in Log Scale | 0.413 |
| 95% t UCL (assumes normality of ROS data) | 0.117 | 95% Percentile Bootstrap UCL | 0.117 |
| 95% BCA Bootstrap UCL | 0.118 | 95% Bootstrap t UCL | 0.12 |
| 95% H-UCL (Log ROS) | 0.119 | | |

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -2.363 | KM Geo Mean | 0.0941 |
| KM SD (logged) | 0.451 | 95% Critical H Value (KM-Log) | 1.904 |
| KM Standard Error of Mean (logged) | 0.1 | 95% H-UCL (KM -Log) | 0.123 |
| KM SD (logged) | 0.451 | 95% Critical H Value (KM-Log) | 1.904 |
| KM Standard Error of Mean (logged) | 0.1 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.102 | Mean in Log Scale | -2.361 |
| SD in Original Scale | 0.044 | SD in Log Scale | 0.405 |
| 95% t UCL (Assumes normality) | 0.116 | 95% H-Stat UCL | 0.118 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (t) UCL | 0.121 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**CHROMIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 28 | Number of Distinct Observations | 24 |
| Number of Detects | 27 | Number of Non-Detects | 1 |
| Number of Distinct Detects | 23 | Number of Distinct Non-Detects | 1 |
| Minimum Detect | 0.094 | Minimum Non-Detect | 0.4 |
| Maximum Detect | 15 | Maximum Non-Detect | 0.4 |
| Variance Detects | 10.37 | Percent Non-Detects | 3.571% |
| Mean Detects | 2.044 | SD Detects | 3.22 |
| Median Detects | 1.1 | CV Detects | 1.575 |
| Skewness Detects | 2.872 | Kurtosis Detects | 9.85 |
| Mean of Logged Detects | -0.387 | SD of Logged Detects | 1.607 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.643 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.923 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.272 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.167 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| KM Mean | 1.977 | KM Standard Error of Mean | 0.601 |
| KM SD | 3.123 | 95% KM (BCA) UCL | 3.007 |
| 95% KM (t) UCL | 3.001 | 95% KM (Percentile Bootstrap) UCL | 3.094 |
| 95% KM (z) UCL | 2.966 | 95% KM Bootstrap t UCL | 3.761 |
| 90% KM Chebyshev UCL | 3.781 | 95% KM Chebyshev UCL | 4.598 |
| 97.5% KM Chebyshev UCL | 5.732 | 99% KM Chebyshev UCL | 7.96 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.126 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.801 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.21 | **Kolmogorov-Smirnov GOF** | |
| 5% K-S Critical Value | 0.177 | Detected Data Not Gamma Distributed at 5% Significance Level | |

**Detected Data Not Gamma Distributed at 5% Significance Level**

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.566 | k star (bias corrected MLE) | 0.527 |
| Theta hat (MLE) | 3.614 | Theta star (bias corrected MLE) | 3.876 |
| nu hat (MLE) | 30.54 | nu star (bias corrected) | 28.48 |
| Mean (detects) | 2.044 | | |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 1.971 |
| Maximum | 15 | Median | 0.705 |
| SD | 3.183 | CV | 1.615 |
| k hat (MLE) | 0.519 | k star (bias corrected MLE) | 0.487 |
| Theta hat (MLE) | 3.798 | Theta star (bias corrected MLE) | 4.046 |
| nu hat (MLE) | 29.07 | nu star (bias corrected) | 27.29 |
| Adjusted Level of Significance (β) | 0.0404 | | |
| Approximate Chi Square Value (27.29, α) | 16.37 | Adjusted Chi Square Value (27.29, β) | 15.85 |
| 95% Gamma Approximate UCL (use when n>=50) | 3.285 | 95% Gamma Adjusted UCL (use when n<50) | 3.394 |

**Estimates of Gamma Parameters using KM Estimates**

| | | | |
|---|---|---|---|
| Mean (KM) | 1.977 | SD (KM) | 3.123 |
| Variance (KM) | 9.751 | SE of Mean (KM) | 0.601 |
| k hat (KM) | 0.401 | k star (KM) | 0.382 |
| nu hat (KM) | 22.44 | nu star (KM) | 21.37 |
| theta hat (KM) | 4.933 | theta star (KM) | 5.18 |
| 80% gamma percentile (KM) | 3.172 | 90% gamma percentile (KM) | 5.629 |
| 95% gamma percentile (KM) | 8.347 | 99% gamma percentile (KM) | 15.22 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (21.37, α) | 11.87 | Adjusted Chi Square Value (21.37, β) | 11.43 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 3.56 | 95% Gamma Adjusted KM-UCL (use when n<50) | 3.696 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.895 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.923 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.186 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.167 | Detected Data Not Lognormal at 5% Significance Level | |

Detected Data Not Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 1.979 | Mean in Log Scale | -0.429 |
| SD in Original Scale | 3.179 | SD in Log Scale | 1.593 |
| 95% t UCL (assumes normality of ROS data) | 3.002 | 95% Percentile Bootstrap UCL | 3.051 |
| 95% BCA Bootstrap UCL | 3.33 | 95% Bootstrap t UCL | 3.826 |
| 95% H-UCL (Log ROS) | 6.296 | | |

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -0.441 | KM Geo Mean | 0.643 |
| KM SD (logged) | 1.576 | 95% Critical H Value (KM-Log) | 3.24 |
| KM Standard Error of Mean (logged) | 0.304 | 95% H-UCL (KM -Log) | 5.944 |
| KM SD (logged) | 1.576 | 95% Critical H Value (KM-Log) | 3.24 |
| KM Standard Error of Mean (logged) | 0.304 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 1.978 | Mean in Log Scale | -0.431 |
| SD in Original Scale | 3.179 | SD in Log Scale | 1.594 |
| 95% t UCL (Assumes normality) | 3.001 | 95% H-Stat UCL | 6.307 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Data do not follow a Discernible Distribution at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (Chebyshev) UCL | 4.598 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 28 | Number of Distinct Observations | 25 |
| Number of Detects | 16 | Number of Non-Detects | 12 |
| Number of Distinct Detects | 15 | Number of Distinct Non-Detects | 10 |
| Minimum Detect | 0.033 | Minimum Non-Detect | 0.082 |
| Maximum Detect | 1 | Maximum Non-Detect | 0.099 |
| Variance Detects | 0.0738 | Percent Non-Detects | 42.86% |
| Mean Detects | 0.188 | SD Detects | 0.272 |
| Median Detects | 0.105 | CV Detects | 1.445 |
| Skewness Detects | 2.523 | Kurtosis Detects | 5.766 |
| Mean of Logged Detects | -2.252 | SD of Logged Detects | 0.992 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.575 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.887 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.401 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.213 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| KM Mean | 0.128 | KM Standard Error of Mean | 0.0412 |
| KM SD | 0.211 | 95% KM (BCA) UCL | 0.212 |
| 95% KM (t) UCL | 0.198 | 95% KM (Percentile Bootstrap) UCL | 0.203 |
| 95% KM (z) UCL | 0.195 | 95% KM Bootstrap t UCL | 0.416 |
| 90% KM Chebyshev UCL | 0.251 | 95% KM Chebyshev UCL | 0.307 |
| 97.5% KM Chebyshev UCL | 0.385 | 99% KM Chebyshev UCL | 0.538 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.384 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.764 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.279 | **Kolmogorov-Smirnov GOF** | |
| 5% K-S Critical Value | 0.221 | Detected Data Not Gamma Distributed at 5% Significance Level | |

Detected Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.995 | k star (bias corrected MLE) | 0.85 |
| Theta hat (MLE) | 0.189 | Theta star (bias corrected MLE) | 0.221 |
| nu hat (MLE) | 31.84 | nu star (bias corrected) | 27.21 |
| Mean (detects) | 0.188 | | |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 0.113 |
| Maximum | 1 | Median | 0.0405 |
| SD | 0.221 | CV | 1.958 |
| k hat (MLE) | 0.609 | k star (bias corrected MLE) | 0.567 |
| Theta hat (MLE) | 0.185 | Theta star (bias corrected MLE) | 0.199 |
| nu hat (MLE) | 34.1 | nu star (bias corrected) | 31.78 |
| Adjusted Level of Significance (β) | 0.0404 | | |
| Approximate Chi Square Value (31.78, α) | 19.89 | Adjusted Chi Square Value (31.78, β) | 19.31 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.18 | 95% Gamma Adjusted UCL (use when n<50) | 0.186 |

**Estimates of Gamma Parameters using KM Estimates**

| | | | |
|---|---|---|---|
| Mean (KM) | 0.128 | SD (KM) | 0.211 |
| Variance (KM) | 0.0444 | SE of Mean (KM) | 0.0412 |
| k hat (KM) | 0.367 | k star (KM) | 0.352 |
| nu hat (KM) | 20.57 | nu star (KM) | 19.7 |
| theta hat (KM) | 0.348 | theta star (KM) | 0.363 |
| 80% gamma percentile (KM) | 0.202 | 90% gamma percentile (KM) | 0.369 |
| 95% gamma percentile (KM) | 0.555 | 99% gamma percentile (KM) | 1.029 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (19.70, α) | 10.63 | Adjusted Chi Square Value (19.70, β) | 10.22 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.237 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.246 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.878 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.887 | Detected Data Not Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.189 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.213 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Approximate Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.129 | Mean in Log Scale | -2.58 |
| SD in Original Scale | 0.214 | SD in Log Scale | 0.843 |
| 95% t UCL (assumes normality of ROS data) | 0.198 | 95% Percentile Bootstrap UCL | 0.202 |
| 95% BCA Bootstrap UCL | 0.234 | 95% Bootstrap t UCL | 0.429 |
| 95% H-UCL (Log ROS) | 0.156 | | |

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -2.604 | KM Geo Mean | 0.074 |
| KM SD (logged) | 0.845 | 95% Critical H Value (KM-Log) | 2.274 |
| KM Standard Error of Mean (logged) | 0.17 | 95% H-UCL (KM -Log) | 0.153 |
| KM SD (logged) | 0.845 | 95% Critical H Value (KM-Log) | 2.274 |
| KM Standard Error of Mean (logged) | 0.17 | | |

**DL/2 Statistics**

| DL/2 Normal | | DL/2 Log-Transformed | |
|---|---|---|---|
| Mean in Original Scale | 0.127 | Mean in Log Scale | -2.619 |
| SD in Original Scale | 0.215 | SD in Log Scale | 0.858 |
| 95% t UCL (Assumes normality) | 0.196 | 95% H-Stat UCL | 0.154 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| KM H-UCL | 0.153 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**4,4'-DDD**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 28 | Number of Distinct Observations | 27 |
| Number of Detects | 26 | Number of Non-Detects | 2 |
| Number of Distinct Detects | 26 | Number of Distinct Non-Detects | 1 |
| Minimum Detect | 4.6000E-4 | Minimum Non-Detect | 3.1000E-4 |
| Maximum Detect | 0.042 | Maximum Non-Detect | 3.1000E-4 |
| Variance Detects | 1.4356E-4 | Percent Non-Detects | 7.143% |
| Mean Detects | 0.00917 | SD Detects | 0.012 |
| Median Detects | 0.00365 | CV Detects | 1.307 |
| Skewness Detects | 1.745 | Kurtosis Detects | 2.05 |
| Mean of Logged Detects | -5.466 | SD of Logged Detects | 1.289 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.71 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.92 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.278 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.17 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| KM Mean | 0.00853 | KM Standard Error of Mean | 0.00223 |
| KM SD | 0.0115 | 95% KM (BCA) UCL | 0.012 |
| 95% KM (t) UCL | 0.0123 | 95% KM (Percentile Bootstrap) UCL | 0.0125 |
| 95% KM (z) UCL | 0.0122 | 95% KM Bootstrap t UCL | 0.0139 |
| 90% KM Chebyshev UCL | 0.0152 | 95% KM Chebyshev UCL | 0.0182 |
| 97.5% KM Chebyshev UCL | 0.0224 | 99% KM Chebyshev UCL | 0.0307 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.979 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.783 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.149 | **Kolmogorov-Smirnov GOF** | |
| 5% K-S Critical Value | 0.178 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data follow Appr. Gamma Distribution at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.771 | k star (bias corrected MLE) | 0.708 |
| Theta hat (MLE) | 0.0119 | Theta star (bias corrected MLE) | 0.013 |
| nu hat (MLE) | 40.09 | nu star (bias corrected) | 36.8 |
| Mean (detects) | 0.00917 | | |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 4.6000E-4 | Mean | 0.00923 |
| Maximum | 0.042 | Median | 0.00475 |
| SD | 0.0115 | CV | 1.25 |
| k hat (MLE) | 0.823 | k star (bias corrected MLE) | 0.759 |
| Theta hat (MLE) | 0.0112 | Theta star (bias corrected MLE) | 0.0122 |
| nu hat (MLE) | 46.08 | nu star (bias corrected) | 42.48 |
| Adjusted Level of Significance (β) | 0.0404 | | |
| Approximate Chi Square Value (42.48, α) | 28.53 | Adjusted Chi Square Value (42.48, β) | 27.83 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0137 | 95% Gamma Adjusted UCL (use when n<50) | 0.0141 |

**Estimates of Gamma Parameters using KM Estimates**

| | | | |
|---|---|---|---|
| Mean (KM) | 0.00853 | SD (KM) | 0.0115 |
| Variance (KM) | 1.3338E-4 | SE of Mean (KM) | 0.00223 |
| k hat (KM) | 0.546 | k star (KM) | 0.511 |
| nu hat (KM) | 30.58 | nu star (KM) | 28.64 |
| theta hat (KM) | 0.0156 | theta star (KM) | 0.0167 |
| 80% gamma percentile (KM) | 0.014 | 90% gamma percentile (KM) | 0.023 |
| 95% gamma percentile (KM) | 0.0325 | 99% gamma percentile (KM) | 0.0559 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (28.64, α) | 17.42 | Adjusted Chi Square Value (28.64, β) | 16.88 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.014 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.0145 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.953 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.92 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.131 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.17 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.00853 | Mean in Log Scale | -5.685 |
| SD in Original Scale | 0.0118 | SD in Log Scale | 1.48 |
| 95% t UCL (assumes normality of ROS data) | 0.0123 | 95% Percentile Bootstrap UCL | 0.0123 |
| 95% BCA Bootstrap UCL | 0.0132 | 95% Bootstrap t UCL | 0.0138 |
| 95% H-UCL (Log ROS) | 0.0246 | | |

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -5.652 | KM Geo Mean | 0.00351 |
| KM SD (logged) | 1.391 | 95% Critical H Value (KM-Log) | 2.974 |
| KM Standard Error of Mean (logged) | 0.268 | 95% H-UCL (KM -Log) | 0.0205 |
| KM SD (logged) | 1.391 | 95% Critical H Value (KM-Log) | 2.974 |
| KM Standard Error of Mean (logged) | 0.268 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.00852 | Mean in Log Scale | -5.702 |
| SD in Original Scale | 0.0118 | SD in Log Scale | 1.513 |
| 95% t UCL (Assumes normality) | 0.0123 | 95% H-Stat UCL | 0.0262 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| Gamma Adjusted KM-UCL (use when k<=1 and 15 < n < 50 b | 0.0145 |

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test

When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**4,4'-DDE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 28 | Number of Distinct Observations | 22 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.001 | Mean | 0.0149 |
| Maximum | 0.063 | Median | 0.00965 |
| SD | 0.0176 | Std. Error of Mean | 0.00332 |
| Coefficient of Variation | 1.177 | Skewness | 1.724 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.731 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.924 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.294 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.164 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
|---|---|---|---|
| 95% Student's-t UCL | 0.0206 | 95% Adjusted-CLT UCL (Chen-1995) | 0.0215 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.0208 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.789 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.776 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.164 | **Kolmogorov-Smirnov Gamma GOF Test** | |
| 5% K-S Critical Value | 0.171 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data follow Appr. Gamma Distribution at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.949 | k star (bias corrected MLE) | 0.871 |
| Theta hat (MLE) | 0.0157 | Theta star (bias corrected MLE) | 0.0171 |
| nu hat (MLE) | 53.13 | nu star (bias corrected) | 48.77 |
| MLE Mean (bias corrected) | 0.0149 | MLE Sd (bias corrected) | 0.016 |
| | | Approximate Chi Square Value (0.05) | 33.74 |
| Adjusted Level of Significance | 0.0404 | Adjusted Chi Square Value | 32.97 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50) | 0.0216 | 95% Adjusted Gamma UCL (use when n<50) | 0.0221 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.963 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.924 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.0901 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.164 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -6.908 | Mean of logged Data | -4.817 |
| Maximum of Logged Data | -2.765 | SD of logged Data | 1.15 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.0281 | 90% Chebyshev (MVUE) UCL | 0.0267 |
| 95% Chebyshev (MVUE) UCL | 0.032 | 97.5% Chebyshev (MVUE) UCL | 0.0393 |
| 99% Chebyshev (MVUE) UCL | 0.0536 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.0204 | 95% Jackknife UCL | 0.0206 |
| 95% Standard Bootstrap UCL | 0.0204 | 95% Bootstrap-t UCL | 0.0226 |
| 95% Hall's Bootstrap UCL | 0.0209 | 95% Percentile Bootstrap UCL | 0.0204 |
| 95% BCA Bootstrap UCL | 0.0217 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.0249 | 95% Chebyshev(Mean, Sd) UCL | 0.0294 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.0357 | 99% Chebyshev(Mean, Sd) UCL | 0.048 |

**Suggested UCL to Use**

95% Adjusted Gamma UCL 0.0221

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test

When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**AROCLOR-1254**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 28 | Number of Distinct Observations | 26 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.004 | Mean | 0.0406 |
| Maximum | 0.16 | Median | 0.0205 |
| SD | 0.0462 | Std. Error of Mean | 0.00874 |
| Coefficient of Variation | 1.138 | Skewness | 1.441 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.754 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.924 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.259 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.164 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
|---|---|---|---|
| 95% Student's-t UCL | 0.0555 | 95% Adjusted-CLT UCL (Chen-1995) | 0.0576 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.0559 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 1.038 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.776 | Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.15 | **Kolmogorov-Smirnov Gamma GOF Test** | |
| 5% K-S Critical Value | 0.171 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data follow Appr. Gamma Distribution at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.952 | k star (bias corrected MLE) | 0.874 |
| Theta hat (MLE) | 0.0427 | Theta star (bias corrected MLE) | 0.0465 |
| nu hat (MLE) | 53.3 | nu star (bias corrected) | 48.93 |
| MLE Mean (bias corrected) | 0.0406 | MLE Sd (bias corrected) | 0.0435 |
| | | Approximate Chi Square Value (0.05) | 33.87 |
| Adjusted Level of Significance | 0.0404 | Adjusted Chi Square Value | 33.09 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50) | 0.0587 | 95% Adjusted Gamma UCL (use when n<50) | 0.0601 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.932 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.924 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.131 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.164 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -5.521 | Mean of logged Data | -3.813 |
| Maximum of Logged Data | -1.833 | SD of logged Data | 1.136 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.0747 | 90% Chebyshev (MVUE) UCL | 0.0713 |
| 95% Chebyshev (MVUE) UCL | 0.0852 | 97.5% Chebyshev (MVUE) UCL | 0.105 |
| 99% Chebyshev (MVUE) UCL | 0.142 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.055 | 95% Jackknife UCL | 0.0555 |
| 95% Standard Bootstrap UCL | 0.0549 | 95% Bootstrap-t UCL | 0.0578 |
| 95% Hall's Bootstrap UCL | 0.0566 | 95% Percentile Bootstrap UCL | 0.0548 |
| 95% BCA Bootstrap UCL | 0.0581 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.0669 | 95% Chebyshev(Mean, Sd) UCL | 0.0787 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.0952 | 99% Chebyshev(Mean, Sd) UCL | 0.128 |

**Suggested UCL to Use**

95% Adjusted Gamma UCL 0.0601

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test

When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

AROCLOR-1260

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 28 | Number of Distinct Observations | 25 |
| Number of Detects | 27 | Number of Non-Detects | 1 |
| Number of Distinct Detects | 24 | Number of Distinct Non-Detects | 1 |
| Minimum Detect | 0.0054 | Minimum Non-Detect | 0.0031 |
| Maximum Detect | 0.066 | Maximum Non-Detect | 0.0031 |
| Variance Detects | 3.2400E-4 | Percent Non-Detects | 3.571% |
| Mean Detects | 0.025 | SD Detects | 0.018 |
| Median Detects | 0.018 | CV Detects | 0.72 |
| Skewness Detects | 0.972 | Kurtosis Detects | -0.0561 |
| Mean of Logged Detects | -3.945 | SD of Logged Detects | 0.746 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.878 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.923 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.17 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.167 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| KM Mean | 0.0242 | KM Standard Error of Mean | 0.00343 |
| KM SD | 0.0178 | 95% KM (BCA) UCL | 0.0295 |
| 95% KM (t) UCL | 0.0301 | 95% KM (Percentile Bootstrap) UCL | 0.03 |
| 95% KM (z) UCL | 0.0299 | 95% KM Bootstrap t UCL | 0.0309 |
| 90% KM Chebyshev UCL | 0.0345 | 95% KM Chebyshev UCL | 0.0392 |
| 97.5% KM Chebyshev UCL | 0.0456 | 99% KM Chebyshev UCL | 0.0583 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.424 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.756 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.115 | **Kolmogorov-Smirnov GOF** | |
| 5% K-S Critical Value | 0.17 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 2.102 | k star (bias corrected MLE) | 1.893 |
| Theta hat (MLE) | 0.0119 | Theta star (bias corrected MLE) | 0.0132 |
| nu hat (MLE) | 113.5 | nu star (bias corrected) | 102.2 |
| Mean (detects) | 0.025 | | |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.0054 | Mean | 0.0245 |
| Maximum | 0.066 | Median | 0.0175 |
| SD | 0.0179 | CV | 0.731 |
| k hat (MLE) | 2.088 | k star (bias corrected MLE) | 1.888 |
| Theta hat (MLE) | 0.0117 | Theta star (bias corrected MLE) | 0.013 |
| nu hat (MLE) | 116.9 | nu star (bias corrected) | 105.7 |
| Adjusted Level of Significance (β) | 0.0404 | | |
| Approximate Chi Square Value (105.73, α) | 83 | Adjusted Chi Square Value (105.73, β) | 81.75 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0312 | 95% Gamma Adjusted UCL (use when n<50) | 0.0316 |

**Estimates of Gamma Parameters using KM Estimates**

| | | | |
|---|---|---|---|
| Mean (KM) | 0.0242 | SD (KM) | 0.0178 |
| Variance (KM) | 3.1737E-4 | SE of Mean (KM) | 0.00343 |
| k hat (KM) | 1.847 | k star (KM) | 1.673 |
| nu hat (KM) | 103.4 | nu star (KM) | 93.68 |
| theta hat (KM) | 0.0131 | theta star (KM) | 0.0145 |
| 80% gamma percentile (KM) | 0.037 | 90% gamma percentile (KM) | 0.0491 |
| 95% gamma percentile (KM) | 0.0608 | 99% gamma percentile (KM) | 0.0871 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (93.68, α) | 72.36 | Adjusted Chi Square Value (93.68, β) | 71.2 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.0313 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.0319 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.96 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.923 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.08 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.167 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.0242 | Mean in Log Scale | -4.013 |
| SD in Original Scale | 0.0181 | SD in Log Scale | 0.813 |
| 95% t UCL (assumes normality of ROS data) | 0.03 | 95% Percentile Bootstrap UCL | 0.0299 |
| 95% BCA Bootstrap UCL | 0.0312 | 95% Bootstrap t UCL | 0.0312 |
| 95% H-UCL (Log ROS) | 0.0358 | | |

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -4.011 | KM Geo Mean | 0.0181 |
| KM SD (logged) | 0.795 | 95% Critical H Value (KM-Log) | 2.22 |
| KM Standard Error of Mean (logged) | 0.153 | 95% H-UCL (KM -Log) | 0.0349 |
| KM SD (logged) | 0.795 | 95% Critical H Value (KM-Log) | 2.22 |
| KM Standard Error of Mean (logged) | 0.153 | | |

**DL/2 Statistics**

| DL/2 Normal | | DL/2 Log-Transformed | |
|---|---|---|---|
| Mean in Original Scale | 0.0242 | Mean in Log Scale | -4.036 |
| SD in Original Scale | 0.0182 | SD in Log Scale | 0.874 |
| 95% t UCL (Assumes normality) | 0.03 | 95% H-Stat UCL | 0.0382 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Gamma Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM Adjusted Gamma UCL | 0.0319 | 95% GROS Adjusted Gamma UCL | 0.0316 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

| Analyte | Valid Obs | Rec. UCL | Method | Max | UCL>Max |
|---|---|---|---|---|---|
| ARSENIC | 18 | 0.078 | 95% KM (t) UCL | 0.11 | |
| CHROMIUM | 18 | 5.4 | Gamma Adjusted KM-UCL (use when k<=1 and 15 < n < 50 but k<=1) | 14 | |
| LEAD | 18 | 0.19 | Gamma Adjusted KM-UCL (use when k<=1 and 15 < n < 50 but k<=1) | 0.58 | |
| 4,4'-DDD | 18 | 0.0016 | 95% KM Adjusted Gamma UCL | 0.0045 | |
| 4,4'-DDE | 18 | 0.0035 | 95% Student's-t UCL | 0.0078 | |
| AROCLOR-1254 | 18 | 0.012 | 95% Adjusted Gamma UCL | 0.027 | |
| AROCLOR-1260 | 18 | 0.0081 | 95% KM Adjusted Gamma UCL | 0.014 | |

Sportfish_output.xlsx

## UCL Statistics for Data Sets with Non-Detects

| User Selected Options | |
|---|---|
| Date/Time of Computation | ProUCL 5.17/17/2018 16:22:13 |
| From File | ProUCL_Fish_d.xls |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Number of Bootstrap Operations | 2000 |

## ARSENIC

### General Statistics

| | | | |
|---|---|---|---|
| Total Number of Observations | 18 | Number of Distinct Observations | 15 |
| Number of Detects | 10 | Number of Non-Detects | 8 |
| Number of Distinct Detects | 8 | Number of Distinct Non-Detects | 8 |
| Minimum Detect | 0.051 | Minimum Non-Detect | 0.048 |
| Maximum Detect | 0.11 | Maximum Non-Detect | 0.2 |
| Variance Detects | 4.2054E-4 | Percent Non-Detects | 44.44% |
| Mean Detects | 0.0739 | SD Detects | 0.0205 |
| Median Detects | 0.069 | CV Detects | 0.277 |
| Skewness Detects | 0.763 | Kurtosis Detects | -0.864 |
| Mean of Logged Detects | -2.638 | SD of Logged Detects | 0.266 |

### Normal GOF Test on Detects Only

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.885 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.842 | Detected Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.218 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.262 | Detected Data appear Normal at 5% Significance Level | |

Detected Data appear Normal at 5% Significance Level

### Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

| | | | |
|---|---|---|---|
| KM Mean | 0.068 | KM Standard Error of Mean | 0.0059 |
| KM SD | 0.0202 | 95% KM (BCA) UCL | 0.0788 |
| 95% KM (t) UCL | 0.0783 | 95% KM (Percentile Bootstrap) UCL | 0.0781 |
| 95% KM (z) UCL | 0.0777 | 95% KM Bootstrap t UCL | 0.0812 |
| 90% KM Chebyshev UCL | 0.0857 | 95% KM Chebyshev UCL | 0.0937 |
| 97.5% KM Chebyshev UCL | 0.105 | 99% KM Chebyshev UCL | 0.127 |

### Gamma GOF Tests on Detected Observations Only

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.494 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.725 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.196 | **Kolmogorov-Smirnov GOF** | |
| 5% K-S Critical Value | 0.266 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 15.45 | k star (bias corrected MLE) | 10.88 |
| Theta hat (MLE) | 0.00478 | Theta star (bias corrected MLE) | 0.00679 |
| nu hat (MLE) | 309 | nu star (bias corrected) | 217.6 |
| Mean (detects) | 0.0739 | | |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.0308 | Mean | 0.0639 |
| Maximum | 0.11 | Median | 0.0627 |
| SD | 0.0213 | CV | 0.334 |
| k hat (MLE) | 9.2 | k star (bias corrected MLE) | 7.703 |
| Theta hat (MLE) | 0.00695 | Theta star (bias corrected MLE) | 0.0083 |
| nu hat (MLE) | 331.2 | nu star (bias corrected) | 277.3 |
| Adjusted Level of Significance (β) | 0.0357 | | |
| Approximate Chi Square Value (277.32, α) | 239.8 | Adjusted Chi Square Value (277.32, β) | 236.4 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0739 | 95% Gamma Adjusted UCL (use when n<50) | 0.075 |

**Estimates of Gamma Parameters using KM Estimates**

| | | | |
|---|---|---|---|
| Mean (KM) | 0.068 | SD (KM) | 0.0202 |
| Variance (KM) | 4.0738E-4 | SE of Mean (KM) | 0.0059 |
| k hat (KM) | 11.35 | k star (KM) | 9.496 |
| nu hat (KM) | 408.6 | nu star (KM) | 341.8 |
| theta hat (KM) | 0.00599 | theta star (KM) | 0.00716 |
| 80% gamma percentile (KM) | 0.0855 | 90% gamma percentile (KM) | 0.0974 |
| 95% gamma percentile (KM) | 0.108 | 99% gamma percentile (KM) | 0.13 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (341.85, α) | 300 | Adjusted Chi Square Value (341.85, β) | 296.2 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.0775 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.0785 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.914 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.842 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.185 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.262 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.0649 | Mean in Log Scale | -2.777 |
| SD in Original Scale | 0.0198 | SD in Log Scale | 0.296 |
| 95% t UCL (assumes normality of ROS data) | 0.073 | 95% Percentile Bootstrap UCL | 0.0728 |
| 95% BCA Bootstrap UCL | 0.0739 | 95% Bootstrap t UCL | 0.0748 |
| 95% H-UCL (Log ROS) | 0.0742 | | |

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -2.728 | KM Geo Mean | 0.0653 |
| KM SD (logged) | 0.276 | 95% Critical H Value (KM-Log) | 1.836 |
| KM Standard Error of Mean (logged) | 0.0808 | 95% H-UCL (KM -Log) | 0.0768 |
| KM SD (logged) | 0.276 | 95% Critical H Value (KM-Log) | 1.836 |
| KM Standard Error of Mean (logged) | 0.0808 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 0.0717 | Mean in Log Scale | -2.732 |
| SD in Original Scale | 0.0277 | SD in Log Scale | 0.493 |
| 95% t UCL (Assumes normality) | 0.083 | 95% H-Stat UCL | 0.0935 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Normal Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| 95% KM (t) UCL | 0.0783 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**CHROMIUM**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 18 | Number of Distinct Observations | 16 |
| Number of Detects | 16 | Number of Non-Detects | 2 |
| Number of Distinct Detects | 14 | Number of Distinct Non-Detects | 2 |
| Minimum Detect | 0.11 | Minimum Non-Detect | 0.09 |
| Maximum Detect | 14 | Maximum Non-Detect | 0.094 |
| Variance Detects | 15.06 | Percent Non-Detects | 11.11% |
| Mean Detects | 2.69 | SD Detects | 3.881 |
| Median Detects | 1.75 | CV Detects | 1.443 |
| Skewness Detects | 2.29 | Kurtosis Detects | 4.902 |
| Mean of Logged Detects | 0.12 | SD of Logged Detects | 1.428 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.659 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.887 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.302 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.213 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| KM Mean | 2.401 | KM Standard Error of Mean | 0.885 |
| KM SD | 3.636 | 95% KM (BCA) UCL | 3.982 |
| 95% KM (t) UCL | 3.941 | 95% KM (Percentile Bootstrap) UCL | 3.986 |
| 95% KM (z) UCL | 3.857 | 95% KM Bootstrap t UCL | 6.714 |
| 90% KM Chebyshev UCL | 5.057 | 95% KM Chebyshev UCL | 6.259 |
| 97.5% KM Chebyshev UCL | 7.929 | 99% KM Chebyshev UCL | 11.21 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.595 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.779 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.179 | **Kolmogorov-Smirnov GOF** | |
| 5% K-S Critical Value | 0.224 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 0.696 | k star (bias corrected MLE) | 0.607 |
| Theta hat (MLE) | 3.868 | Theta star (bias corrected MLE) | 4.433 |
| nu hat (MLE) | 22.26 | nu star (bias corrected) | 19.42 |
| Mean (detects) | 2.69 | | |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 2.393 |
| Maximum | 14 | Median | 1.06 |
| SD | 3.747 | CV | 1.566 |
| k hat (MLE) | 0.498 | k star (bias corrected MLE) | 0.452 |
| Theta hat (MLE) | 4.808 | Theta star (bias corrected MLE) | 5.296 |
| nu hat (MLE) | 17.92 | nu star (bias corrected) | 16.26 |
| Adjusted Level of Significance (β) | 0.0357 | | |
| Approximate Chi Square Value (16.26, α) | 8.148 | Adjusted Chi Square Value (16.26, β) | 7.601 |
| 95% Gamma Approximate UCL (use when n>=50) | 4.775 | 95% Gamma Adjusted UCL (use when n<50) | 5.119 |

**Estimates of Gamma Parameters using KM Estimates**

| | | | |
|---|---|---|---|
| Mean (KM) | 2.401 | SD (KM) | 3.636 |
| Variance (KM) | 13.22 | SE of Mean (KM) | 0.885 |
| k hat (KM) | 0.436 | k star (KM) | 0.401 |
| nu hat (KM) | 15.7 | nu star (KM) | 14.42 |
| theta hat (KM) | 5.505 | theta star (KM) | 5.995 |
| 80% gamma percentile (KM) | 3.876 | 90% gamma percentile (KM) | 6.781 |
| 95% gamma percentile (KM) | 9.973 | 99% gamma percentile (KM) | 18 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (14.42, α) | 6.86 | Adjusted Chi Square Value (14.42, β) | 6.364 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 5.048 | 95% Gamma Adjusted KM-UCL (use when n<50) | 5.441 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.95 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.887 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.159 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.213 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 2.396 | Mean in Log Scale | -0.249 |
| SD in Original Scale | 3.745 | SD in Log Scale | 1.718 |
| 95% t UCL (assumes normality of ROS data) | 3.931 | 95% Percentile Bootstrap UCL | 3.938 |
| 95% BCA Bootstrap UCL | 4.25 | 95% Bootstrap t UCL | 6.543 |
| 95% H-UCL (Log ROS) | 16.71 | | |

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -0.161 | KM Geo Mean | 0.851 |
| KM SD (logged) | 1.527 | 95% Critical H Value (KM-Log) | 3.479 |
| KM Standard Error of Mean (logged) | 0.372 | 95% H-UCL (KM -Log) | 9.899 |
| KM SD (logged) | 1.527 | 95% Critical H Value (KM-Log) | 3.479 |
| KM Standard Error of Mean (logged) | 0.372 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 2.397 | Mean in Log Scale | -0.235 |
| SD in Original Scale | 3.744 | SD in Log Scale | 1.694 |
| 95% t UCL (Assumes normality) | 3.932 | 95% H-Stat UCL | 15.61 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Gamma Distributed at 5% Significance Level

**Suggested UCL to Use**

| | |
|---|---|
| Gamma Adjusted KM-UCL (use when k<=1 and 15 < n < 50 b | 5.441 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 18 | Number of Distinct Observations | 18 |
| Number of Detects | 8 | Number of Non-Detects | 10 |
| Number of Distinct Detects | 8 | Number of Distinct Non-Detects | 10 |
| Minimum Detect | 0.04 | Minimum Non-Detect | 0.034 |
| Maximum Detect | 0.58 | Maximum Non-Detect | 0.099 |
| Variance Detects | 0.0333 | Percent Non-Detects | 55.56% |
| Mean Detects | 0.137 | SD Detects | 0.182 |
| Median Detects | 0.068 | CV Detects | 1.327 |
| Skewness Detects | 2.627 | Kurtosis Detects | 7.082 |
| Mean of Logged Detects | -2.431 | SD of Logged Detects | 0.875 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.582 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.818 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.347 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.283 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| KM Mean | 0.0856 | KM Standard Error of Mean | 0.0313 |
| KM SD | 0.123 | 95% KM (BCA) UCL | 0.147 |
| 95% KM (t) UCL | 0.14 | 95% KM (Percentile Bootstrap) UCL | 0.144 |
| 95% KM (z) UCL | 0.137 | 95% KM Bootstrap t UCL | 0.28 |
| 90% KM Chebyshev UCL | 0.179 | 95% KM Chebyshev UCL | 0.222 |
| 97.5% KM Chebyshev UCL | 0.281 | 99% KM Chebyshev UCL | 0.397 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.938 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.732 | Detected Data Not Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.287 | **Kolmogorov-Smirnov GOF** | |
| 5% K-S Critical Value | 0.3 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data follow Appr. Gamma Distribution at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 1.262 | k star (bias corrected MLE) | 0.872 |
| Theta hat (MLE) | 0.109 | Theta star (bias corrected MLE) | 0.158 |
| nu hat (MLE) | 20.19 | nu star (bias corrected) | 13.95 |
| Mean (detects) | 0.137 | | |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.01 | Mean | 0.0666 |
| Maximum | 0.58 | Median | 0.01 |
| SD | 0.134 | CV | 2.011 |
| k hat (MLE) | 0.656 | k star (bias corrected MLE) | 0.584 |
| Theta hat (MLE) | 0.102 | Theta star (bias corrected MLE) | 0.114 |
| nu hat (MLE) | 23.61 | nu star (bias corrected) | 21.01 |
| Adjusted Level of Significance (β) | 0.0357 | | |
| Approximate Chi Square Value (21.01, α) | 11.6 | Adjusted Chi Square Value (21.01, β) | 10.93 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.121 | 95% Gamma Adjusted UCL (use when n<50) | 0.128 |

**Estimates of Gamma Parameters using KM Estimates**

| | | | |
|---|---|---|---|
| Mean (KM) | 0.0856 | SD (KM) | 0.123 |
| Variance (KM) | 0.0152 | SE of Mean (KM) | 0.0313 |
| k hat (KM) | 0.482 | k star (KM) | 0.439 |
| nu hat (KM) | 17.37 | nu star (KM) | 15.81 |
| theta hat (KM) | 0.178 | theta star (KM) | 0.195 |
| 80% gamma percentile (KM) | 0.14 | 90% gamma percentile (KM) | 0.238 |
| 95% gamma percentile (KM) | 0.345 | 99% gamma percentile (KM) | 0.61 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (15.81, α) | 7.825 | Adjusted Chi Square Value (15.81, β) | 7.29 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.173 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.186 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.835 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.818 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.22 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.283 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.077 | Mean in Log Scale | -3.097 |
| SD in Original Scale | 0.13 | SD in Log Scale | 0.892 |
| 95% t UCL (assumes normality of ROS data) | 0.13 | 95% Percentile Bootstrap UCL | 0.135 |
| 95% BCA Bootstrap UCL | 0.168 | 95% Bootstrap t UCL | 0.311 |
| 95% H-UCL (Log ROS) | 0.115 | | |

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -2.839 | KM Geo Mean | 0.0585 |
| KM SD (logged) | 0.692 | 95% Critical H Value (KM-Log) | 2.229 |
| KM Standard Error of Mean (logged) | 0.186 | 95% H-UCL (KM -Log) | 0.108 |
| KM SD (logged) | 0.692 | 95% Critical H Value (KM-Log) | 2.229 |
| KM Standard Error of Mean (logged) | 0.186 | | |

**DL/2 Statistics**

| DL/2 Normal | | DL/2 Log-Transformed | |
|---|---|---|---|
| Mean in Original Scale | 0.0822 | Mean in Log Scale | -2.942 |
| SD in Original Scale | 0.128 | SD in Log Scale | 0.806 |
| 95% t UCL (Assumes normality) | 0.135 | 95% H-Stat UCL | 0.116 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

**Suggested UCL to Use**

Gamma Adjusted KM-UCL (use when k<=1 and 15 < n < 50 b 0.186

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test
When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**4,4'-DDD**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 18 | Number of Distinct Observations | 15 |
| Number of Detects | 17 | Number of Non-Detects | 1 |
| Number of Distinct Detects | 15 | Number of Distinct Non-Detects | 1 |
| Minimum Detect | 2.2000E-4 | Minimum Non-Detect | 3.4000E-4 |
| Maximum Detect | 0.0045 | Maximum Non-Detect | 3.4000E-4 |
| Variance Detects | 9.2333E-7 | Percent Non-Detects | 5.556% |
| Mean Detects | 0.00104 | SD Detects | 9.6090E-4 |
| Median Detects | 8.9000E-4 | CV Detects | 0.922 |
| Skewness Detects | 3.181 | Kurtosis Detects | 11.74 |
| Mean of Logged Detects | -7.112 | SD of Logged Detects | 0.684 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.625 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.892 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.296 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.207 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| KM Mean | 9.9611E-4 | KM Standard Error of Mean | 2.2481E-4 |
| KM SD | 9.2529E-4 | 95% KM (BCA) UCL | 0.00144 |
| 95% KM (t) UCL | 0.00139 | 95% KM (Percentile Bootstrap) UCL | 0.00141 |
| 95% KM (z) UCL | 0.00137 | 95% KM Bootstrap t UCL | 0.00179 |
| 90% KM Chebyshev UCL | 0.00167 | 95% KM Chebyshev UCL | 0.00198 |
| 97.5% KM Chebyshev UCL | 0.0024 | 99% KM Chebyshev UCL | 0.00323 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.611 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.749 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.189 | **Kolmogorov-Smirnov GOF** | |
| 5% K-S Critical Value | 0.211 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 2.194 | k star (bias corrected MLE) | 1.846 |
| Theta hat (MLE) | 4.7483E-4 | Theta star (bias corrected MLE) | 5.6433E-4 |
| nu hat (MLE) | 74.6 | nu star (bias corrected) | 62.76 |
| Mean (detects) | 0.00104 | | |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 2.2000E-4 | Mean | 0.00154 |
| Maximum | 0.01 | Median | 8.9000E-4 |
| SD | 0.00231 | CV | 1.499 |
| k hat (MLE) | 1.146 | k star (bias corrected MLE) | 0.992 |
| Theta hat (MLE) | 0.00134 | Theta star (bias corrected MLE) | 0.00155 |
| nu hat (MLE) | 41.25 | nu star (bias corrected) | 35.71 |
| Adjusted Level of Significance (β) | 0.0357 | | |
| Approximate Chi Square Value (35.71, α) | 23.03 | Adjusted Chi Square Value (35.71, β) | 22.06 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.00239 | 95% Gamma Adjusted UCL (use when n<50) | 0.00249 |

**Estimates of Gamma Parameters using KM Estimates**

| | | | |
|---|---|---|---|
| Mean (KM) | 9.9611E-4 | SD (KM) | 9.2529E-4 |
| Variance (KM) | 8.5617E-7 | SE of Mean (KM) | 2.2481E-4 |
| k hat (KM) | 1.159 | k star (KM) | 1.003 |
| nu hat (KM) | 41.72 | nu star (KM) | 36.1 |
| theta hat (KM) | 8.5951E-4 | theta star (KM) | 9.9332E-4 |
| 80% gamma percentile (KM) | 0.0016 | 90% gamma percentile (KM) | 0.00229 |
| 95% gamma percentile (KM) | 0.00298 | 99% gamma percentile (KM) | 0.00458 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (36.10, α) | 23.35 | Adjusted Chi Square Value (36.10, β) | 22.37 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.00154 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.00161 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.953 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.892 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.156 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.207 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 9.9615E-4 | Mean in Log Scale | -7.184 |
| SD in Original Scale | 9.5209E-4 | SD in Log Scale | 0.731 |
| 95% t UCL (assumes normality of ROS data) | 0.00139 | 95% Percentile Bootstrap UCL | 0.00138 |
| 95% BCA Bootstrap UCL | 0.00158 | 95% Bootstrap t UCL | 0.00179 |
| 95% H-UCL (Log ROS) | 0.00148 | | |

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -7.185 | KM Geo Mean | 7.5824E-4 |
| KM SD (logged) | 0.711 | 95% Critical H Value (KM-Log) | 2.251 |
| KM Standard Error of Mean (logged) | 0.173 | 95% H-UCL (KM -Log) | 0.00144 |
| KM SD (logged) | 0.711 | 95% Critical H Value (KM-Log) | 2.251 |
| KM Standard Error of Mean (logged) | 0.173 | | |

**DL/2 Statistics**

| **DL/2 Normal** | | **DL/2 Log-Transformed** | |
|---|---|---|---|
| Mean in Original Scale | 9.9333E-4 | Mean in Log Scale | -7.199 |
| SD in Original Scale | 9.5459E-4 | SD in Log Scale | 0.759 |
| 95% t UCL (Assumes normality) | 0.00138 | 95% H-Stat UCL | 0.00153 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Gamma Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM Adjusted Gamma UCL | 0.00161 | 95% GROS Adjusted Gamma UCL | 0.00249 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**4,4'-DDE**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 18 | Number of Distinct Observations | 17 |
| | | Number of Missing Observations | 0 |
| Minimum | 6.1000E-4 | Mean | 0.00273 |
| Maximum | 0.0078 | Median | 0.00255 |
| SD | 0.00177 | Std. Error of Mean | 4.1700E-4 |
| Coefficient of Variation | 0.649 | Skewness | 1.479 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.882 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.897 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.144 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.202 | Data appear Normal at 5% Significance Level | |

Data appear Approximate Normal at 5% Significance Level

**Assuming Normal Distribution**

| 95% Normal UCL | | 95% UCLs (Adjusted for Skewness) | |
|---|---|---|---|
| 95% Student's-t UCL | 0.00345 | 95% Adjusted-CLT UCL (Chen-1995) | 0.00357 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.00348 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.183 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.747 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.0918 | **Kolmogorov-Smirnov Gamma GOF Test** | |
| 5% K-S Critical Value | 0.205 | Detected data appear Gamma Distributed at 5% Significance Level | |

**Detected data appear Gamma Distributed at 5% Significance Level**

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 2.801 | k star (bias corrected MLE) | 2.371 |
| Theta hat (MLE) | 9.7303E-4 | Theta star (bias corrected MLE) | 0.00115 |
| nu hat (MLE) | 100.8 | nu star (bias corrected) | 85.37 |
| MLE Mean (bias corrected) | 0.00273 | MLE Sd (bias corrected) | 0.00177 |
| | | Approximate Chi Square Value (0.05) | 65.07 |
| Adjusted Level of Significance | 0.0357 | Adjusted Chi Square Value | 63.37 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50)) | 0.00358 | 95% Adjusted Gamma UCL (use when n<50) | 0.00367 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.987 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.897 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.119 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.202 | Data appear Lognormal at 5% Significance Level | |

**Data appear Lognormal at 5% Significance Level**

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -7.402 | Mean of logged Data | -6.094 |
| Maximum of Logged Data | -4.854 | SD of logged Data | 0.645 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.0039 | 90% Chebyshev (MVUE) UCL | 0.00406 |
| 95% Chebyshev (MVUE) UCL | 0.00466 | 97.5% Chebyshev (MVUE) UCL | 0.00549 |
| 99% Chebyshev (MVUE) UCL | 0.00712 | | |

**Nonparametric Distribution Free UCL Statistics**

**Data appear to follow a Discernible Distribution at 5% Significance Level**

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.00341 | 95% Jackknife UCL | 0.00345 |
| 95% Standard Bootstrap UCL | 0.00339 | 95% Bootstrap-t UCL | 0.00369 |
| 95% Hall's Bootstrap UCL | 0.00388 | 95% Percentile Bootstrap UCL | 0.00345 |
| 95% BCA Bootstrap UCL | 0.00354 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.00398 | 95% Chebyshev(Mean, Sd) UCL | 0.00454 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.00533 | 99% Chebyshev(Mean, Sd) UCL | 0.00687 |

**Suggested UCL to Use**

95% Student's-t UCL 0.00345

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test

When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

**AROCLOR-1254**

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 18 | Number of Distinct Observations | 18 |
| | | Number of Missing Observations | 0 |
| Minimum | 0.0029 | Mean | 0.00916 |
| Maximum | 0.027 | Median | 0.0074 |
| SD | 0.00582 | Std. Error of Mean | 0.00137 |
| Coefficient of Variation | 0.635 | Skewness | 1.862 |

**Normal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.827 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.897 | Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.213 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.202 | Data Not Normal at 5% Significance Level | |

Data Not Normal at 5% Significance Level

**Assuming Normal Distribution**

| **95% Normal UCL** | | **95% UCLs (Adjusted for Skewness)** | |
|---|---|---|---|
| 95% Student's-t UCL | 0.0115 | 95% Adjusted-CLT UCL (Chen-1995) | 0.0121 |
| | | 95% Modified-t UCL (Johnson-1978) | 0.0116 |

**Gamma GOF Test**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.36 | **Anderson-Darling Gamma GOF Test** | |
| 5% A-D Critical Value | 0.745 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.16 | **Kolmogorov-Smirnov Gamma GOF Test** | |
| 5% K-S Critical Value | 0.205 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics**

| | | | |
|---|---|---|---|
| k hat (MLE) | 3.337 | k star (bias corrected MLE) | 2.818 |
| Theta hat (MLE) | 0.00275 | Theta star (bias corrected MLE) | 0.00325 |
| nu hat (MLE) | 120.1 | nu star (bias corrected) | 101.4 |
| MLE Mean (bias corrected) | 0.00916 | MLE Sd (bias corrected) | 0.00546 |
| | | Approximate Chi Square Value (0.05) | 79.21 |
| Adjusted Level of Significance | 0.0357 | Adjusted Chi Square Value | 77.32 |

**Assuming Gamma Distribution**

| | | | |
|---|---|---|---|
| 95% Approximate Gamma UCL (use when n>=50) | 0.0117 | 95% Adjusted Gamma UCL (use when n<50) | 0.012 |

**Lognormal GOF Test**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.976 | **Shapiro Wilk Lognormal GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.897 | Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.123 | **Lilliefors Lognormal GOF Test** | |
| 5% Lilliefors Critical Value | 0.202 | Data appear Lognormal at 5% Significance Level | |

Data appear Lognormal at 5% Significance Level

**Lognormal Statistics**

| | | | |
|---|---|---|---|
| Minimum of Logged Data | -5.843 | Mean of logged Data | -4.85 |
| Maximum of Logged Data | -3.612 | SD of logged Data | 0.567 |

**Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| 95% H-UCL | 0.0122 | 90% Chebyshev (MVUE) UCL | 0.0129 |
| 95% Chebyshev (MVUE) UCL | 0.0146 | 97.5% Chebyshev (MVUE) UCL | 0.017 |
| 99% Chebyshev (MVUE) UCL | 0.0217 | | |

**Nonparametric Distribution Free UCL Statistics**

Data appear to follow a Discernible Distribution at 5% Significance Level

**Nonparametric Distribution Free UCLs**

| | | | |
|---|---|---|---|
| 95% CLT UCL | 0.0114 | 95% Jackknife UCL | 0.0115 |
| 95% Standard Bootstrap UCL | 0.0113 | 95% Bootstrap-t UCL | 0.0128 |
| 95% Hall's Bootstrap UCL | 0.0152 | 95% Percentile Bootstrap UCL | 0.0115 |
| 95% BCA Bootstrap UCL | 0.012 | | |
| 90% Chebyshev(Mean, Sd) UCL | 0.0133 | 95% Chebyshev(Mean, Sd) UCL | 0.0151 |
| 97.5% Chebyshev(Mean, Sd) UCL | 0.0177 | 99% Chebyshev(Mean, Sd) UCL | 0.0228 |

**Suggested UCL to Use**

| | |
|---|---|
| 95% Adjusted Gamma UCL | 0.012 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

AROCLOR-1260

**General Statistics**

| | | | |
|---|---|---|---|
| Total Number of Observations | 18 | Number of Distinct Observations | 18 |
| Number of Detects | 17 | Number of Non-Detects | 1 |
| Number of Distinct Detects | 17 | Number of Distinct Non-Detects | 1 |
| Minimum Detect | 0.0023 | Minimum Non-Detect | 0.0031 |
| Maximum Detect | 0.014 | Maximum Non-Detect | 0.0031 |
| Variance Detects | 1.4417E-5 | Percent Non-Detects | 5.556% |
| Mean Detects | 0.0061 | SD Detects | 0.0038 |
| Median Detects | 0.0046 | CV Detects | 0.623 |
| Skewness Detects | 0.827 | Kurtosis Detects | -0.658 |
| Mean of Logged Detects | -5.279 | SD of Logged Detects | 0.614 |

**Normal GOF Test on Detects Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.863 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.892 | Detected Data Not Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.222 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.207 | Detected Data Not Normal at 5% Significance Level | |

Detected Data Not Normal at 5% Significance Level

**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

| | | | |
|---|---|---|---|
| KM Mean | 0.0059 | KM Standard Error of Mean | 8.9188E-4 |
| KM SD | 0.00367 | 95% KM (BCA) UCL | 0.00736 |
| 95% KM (t) UCL | 0.00745 | 95% KM (Percentile Bootstrap) UCL | 0.00732 |
| 95% KM (z) UCL | 0.00737 | 95% KM Bootstrap t UCL | 0.00771 |
| 90% KM Chebyshev UCL | 0.00858 | 95% KM Chebyshev UCL | 0.00979 |
| 97.5% KM Chebyshev UCL | 0.0115 | 99% KM Chebyshev UCL | 0.0148 |

**Gamma GOF Tests on Detected Observations Only**

| | | | |
|---|---|---|---|
| A-D Test Statistic | 0.672 | **Anderson-Darling GOF Test** | |
| 5% A-D Critical Value | 0.746 | Detected data appear Gamma Distributed at 5% Significance Level | |
| K-S Test Statistic | 0.166 | **Kolmogorov-Smirnov GOF** | |
| 5% K-S Critical Value | 0.211 | Detected data appear Gamma Distributed at 5% Significance Level | |

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

| | | | |
|---|---|---|---|
| k hat (MLE) | 2.952 | k star (bias corrected MLE) | 2.47 |
| Theta hat (MLE) | 0.00207 | Theta star (bias corrected MLE) | 0.00247 |
| nu hat (MLE) | 100.4 | nu star (bias corrected) | 83.98 |
| Mean (detects) | 0.0061 | | |

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

| | | | |
|---|---|---|---|
| Minimum | 0.0023 | Mean | 0.00631 |
| Maximum | 0.014 | Median | 0.0047 |
| SD | 0.0038 | CV | 0.601 |
| k hat (MLE) | 2.991 | k star (bias corrected MLE) | 2.53 |
| Theta hat (MLE) | 0.00211 | Theta star (bias corrected MLE) | 0.0025 |
| nu hat (MLE) | 107.7 | nu star (bias corrected) | 91.07 |
| Adjusted Level of Significance (β) | 0.0357 | | |
| Approximate Chi Square Value (91.07, α) | 70.06 | Adjusted Chi Square Value (91.07, β) | 68.3 |
| 95% Gamma Approximate UCL (use when n>=50) | 0.00821 | 95% Gamma Adjusted UCL (use when n<50) | 0.00842 |

**Estimates of Gamma Parameters using KM Estimates**

| | | | |
|---|---|---|---|
| Mean (KM) | 0.0059 | SD (KM) | 0.00367 |
| Variance (KM) | 1.3473E-5 | SE of Mean (KM) | 8.9188E-4 |
| k hat (KM) | 2.584 | k star (KM) | 2.19 |
| nu hat (KM) | 93.03 | nu star (KM) | 78.86 |
| theta hat (KM) | 0.00228 | theta star (KM) | 0.00269 |
| 80% gamma percentile (KM) | 0.00874 | 90% gamma percentile (KM) | 0.0112 |
| 95% gamma percentile (KM) | 0.0136 | 99% gamma percentile (KM) | 0.0188 |

**Gamma Kaplan-Meier (KM) Statistics**

| | | | |
|---|---|---|---|
| Approximate Chi Square Value (78.86, α) | 59.4 | Adjusted Chi Square Value (78.86, β) | 57.78 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.00783 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.00805 |

**Lognormal GOF Test on Detected Observations Only**

| | | | |
|---|---|---|---|
| Shapiro Wilk Test Statistic | 0.915 | **Shapiro Wilk GOF Test** | |
| 5% Shapiro Wilk Critical Value | 0.892 | Detected Data appear Lognormal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.156 | **Lilliefors GOF Test** | |
| 5% Lilliefors Critical Value | 0.207 | Detected Data appear Lognormal at 5% Significance Level | |

Detected Data appear Lognormal at 5% Significance Level

**Lognormal ROS Statistics Using Imputed Non-Detects**

| | | | |
|---|---|---|---|
| Mean in Original Scale | 0.0059 | Mean in Log Scale | -5.317 |
| SD in Original Scale | 0.00378 | SD in Log Scale | 0.617 |
| 95% t UCL (assumes normality of ROS data) | 0.00745 | 95% Percentile Bootstrap UCL | 0.0074 |
| 95% BCA Bootstrap UCL | 0.00755 | 95% Bootstrap t UCL | 0.0077 |
| 95% H-UCL (Log ROS) | 0.00819 | | |

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

| | | | |
|---|---|---|---|
| KM Mean (logged) | -5.317 | KM Geo Mean | 0.00491 |
| KM SD (logged) | 0.601 | 95% Critical H Value (KM-Log) | 2.125 |
| KM Standard Error of Mean (logged) | 0.146 | 95% H-UCL (KM -Log) | 0.00801 |
| KM SD (logged) | 0.601 | 95% Critical H Value (KM-Log) | 2.125 |
| KM Standard Error of Mean (logged) | 0.146 | | |

**DL/2 Statistics**

| DL/2 Normal | | DL/2 Log-Transformed | |
|---|---|---|---|
| Mean in Original Scale | 0.00584 | Mean in Log Scale | -5.345 |
| SD in Original Scale | 0.00384 | SD in Log Scale | 0.659 |
| 95% t UCL (Assumes normality) | 0.00742 | 95% H-Stat UCL | 0.00841 |

DL/2 is not a recommended method, provided for comparisons and historical reasons

**Nonparametric Distribution Free UCL Statistics**

Detected Data appear Gamma Distributed at 5% Significance Level

**Suggested UCL to Use**

| | | | |
|---|---|---|---|
| 95% KM Adjusted Gamma UCL | 0.00805 | 95% GROS Adjusted Gamma UCL | 0.00842 |

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

# Appendix F

## Blood Lead Modeling Results

**Table 1 Adult Lead Model**

**Adult Lead Model - Recreator and Swimmer**

| Description of Variable | Receptor | Recreator | Swimmer | Recreator | Swimmer | Recreator | Recreator | Swimmer |
|---|---|---|---|---|---|---|---|---|
| | Depth | 0-0.5 ft | 0-0.5 ft | 0-2 ft | 0-2 ft | 0-2 ft | 0-2 ft | 0-2 ft |
| | Exp. Area | SL | SL | BWL | BWL | HC | KWL | KWL |
| Soil/sediment lead concentration ($Pb_S$) | µg/g or ppm | 170 | 170 | 623 | 1,485 | 4,112 | 510 | 1,015 |
| Fetal/maternal PbB ratio | -- | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| Biokinetic slope factor | µg/dL per µg/day | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
| Geometric standard deviation PbB (GSD)[1] | -- | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| Baseline blood lead level ($PbB_0$)[1] | µg/dL | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| Soil ingestion rate (IR) (including soil-derived indoor dust) | g/day | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 |
| Total ingestion rate of outdoor soil and indoor dust | g/day | -- | -- | -- | -- | -- | -- | -- |
| Weighting factor; fraction of $IR_{S+D}$ ingested as outdoor soil | -- | -- | -- | -- | -- | -- | -- | -- |
| Mass fraction of soil in dust | -- | -- | -- | -- | -- | -- | -- | -- |
| Absorption fraction (same for soil and dust) | -- | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| Exposure frequency (same for soil and dust) | days/year | 44 | 105 | 150 | 105 | 150 | 150 | 105 |
| Averaging time (same for soil and dust) | days/year | 150 | 120 | 365 | 120 | 365 | 365 | 120 |
| **PbB of adult receptor, geometric mean** | µg/dL | 0.7 | 1.0 | 1.2 | 3.7 | 4.7 | 1.1 | 2.7 |
| 95$^{th}$ percentile PbB among fetuses of adult receptors | µg/dL | 1.7 | 2.3 | 2.9 | 8.8 | 11.0 | 2.6 | 6.5 |
| Target PbB level of concern (*e.g .*, 10 µg/dL) | µg/dL | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| **Probability that fetal PbB > $PbB_t$, assuming lognormal distribution** | **%** | 0.03% | 0.1% | 0.5% | **25%** | **38%** | 0.3% | **11%** |

**Adult Lead Model - Angler**

| Description of Variable | Receptor | Angler with Fish | Angler Without Fish |
|---|---|---|---|
| | Depth | 0-2 ft | 0-2 ft |
| | Exp. Area | KWL | KWL |
| Soil/sediment lead concentration ($Pb_S$) | µg/g or ppm | 510 | 510 |
| Fish lead concentration ($Pb_F$) | µg/g or ppm | 0.11 | 0 |
| Fetal/maternal PbB ratio | -- | 0.9 | 0.9 |
| Biokinetic slope factor | µg/dL per µg/day | 0.4 | 0.4 |
| Geometric standard deviation PbB (GSD)[1] | -- | 1.8 | 1.8 |
| Baseline blood lead level ($PbB_0$)[1] | µg/dL | 0.6 | 0.6 |
| Soil/sediment ingestion rate ($IR_S$) | g/day | 0.05 | 0.05 |
| Fish ingestion rate ($IR_F$) | g/day | 26 | 0 |
| Absorption fraction for soil/sediment | -- | 0.12 | 0.12 |
| Absorption fraction for fish[2] | -- | 0.20 | 0.20 |
| Exposure frequency for soil/sediment | days/year | 150 | 150 |
| Exposure frequency for fish | days/year | 365 | 365 |
| Averaging time for soil/sediment | days/year | 365 | 365 |
| Averaging time for fish | days/year | 365 | 365 |
| **PbB of adult receptor, geometric mean** | µg/dL | 1.3 | 1.1 |
| 95$^{th}$ percentile PbB among fetuses of adult receptors | µg/dL | 3.2 | 2.6 |
| Target PbB level of concern (*e.g .*, 10 µg/dL) | µg/dL | 5 | 5 |
| **Probability that fetal PbB > $PbB_t$, assuming lognormal distribution** | **%** | 0.8% | 0.3% |

Notes:

Source – US EPA (2003a).

(1) Baseline blood lead level ($PbB_0$) and geometric standard deviation (GSD) derived from US EPA (2017c).

(2) Absorption fraction for fish is based on a relative bioavailability of 1 and an absorption fraction for soluble lead of 0.20 (US EPA, 2003a).

**Table 2 IEUBK Model Input Values to Calculate Fish RSL**

| Parameter | Input Value |
|---|---|
| Air Concentration (µg Pb/$m^3$) | 0.1 (default) |
| Dietary Lead Intake (µg/day) | Model default ranges from 1.95-2.26 |
| Fish Concentration (µg Pb/g) | 0.05 |
| Fish % of Meat Intake | 10% |
| Drinking Water Consumption (L/day) | Model default ranges from 0.2-0.59 |
| Drinking Water Concentration (µg Pb/L) | Model default 4 µg/L |
| Soil and Dust Ingestion Rate (g/day) | Model default ranges from 0.085-0.135 |
| Soil Concentration (µg Pb/g) | 140 |
| Absorption Fraction (%) | Model default 30% for soil and dust<br>Model default 50% for diet and water |
| Maternal Blood Concentration (µg Pb/dL) | 0.6 |

**Table 3 Child Fish Lead Risk Summary**

| Scenario | GM BLL (µg/dL) | Prob. (BLL > 5 µg/dL) (%) |
|---|---|---|
| Baseline, no fish intake | 5.7 | 61% |
| With fish intake | 5.8 | 62% |
| Difference | 0.1 | |

| Inputs: | |
|---|---|
| Soil/sediment EPC (mg/kg)[1] | 510 |
| Fish EPC (mg/kg) | 0.11 |
| Fish intake | 10% of total meat intake |

Note:

(1) The weighted soil/sediment EPC for the baseline scenario is the same as the EPC for the child Recreator from Kirkwood Lake.

# IEUBK Model Output

**LEAD MODEL FOR WINDOWS** **Version 1.1**

| | |
|---|---|
| Model Version: | 1.1 Build11 |
| User Name: | |
| Date: | 8/18/2017 |
| Site Name: | Waterbodies |
| Operable Unit: | **SL Child Recreator** |
| Run Mode: | Research |

*** Air ***

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

| Age | Time Outdoors (hours) | Ventilation Rate ($m^3$/day) | Lung Absorption (%) | Outdoor Air Pb Conc. (µg Pb/$m^3$) |
|---|---|---|---|---|
| 0.5-1 | 1 | 2 | 32 | 0.1 |
| 1-2 | 2 | 3 | 32 | 0.1 |
| 2-3 | 3 | 5 | 32 | 0.1 |
| 3-4 | 4 | 5 | 32 | 0.1 |
| 4-5 | 4 | 5 | 32 | 0.1 |
| 5-6 | 4 | 7 | 32 | 0.1 |
| 6-7 | 4 | 7 | 32 | 0.1 |

*** Diet ***

| Age | Diet Intake (µg/day) |
|---|---|
| 0.5-1 | 2.26 |
| 1-2 | 1.96 |
| 2-3 | 2.13 |
| 3-4 | 2.04 |
| 4-5 | 1.95 |
| 5-6 | 2.05 |
| 6-7 | 2.22 |

*** Drinking Water ***

Drinking Water Concentration: 4.000 µg Pb/L
Water Consumption:

| Age | Water (L/day) |
|---|---|
| 0.5-1 | 0.20 |
| 1-2 | 0.50 |
| 2-3 | 0.52 |
| 3-4 | 0.53 |
| 4-5 | 0.55 |
| 5-6 | 0.58 |
| 6-7 | 0.59 |

*** Soil & Dust ***

| | |
|---|---|
| Multiple Source Analysis Used | |
| Average multiple source concentration: | 45.000 µg/g |
| Mass fraction of outdoor soil to indoor dust conversion factor: | 0.7 |
| Outdoor airborne lead to indoor household dust lead concentration: | 100 |
| Use alternate indoor dust Pb sources? | No |

| Age | Soil (µg Pb/g) | House Dust (µg Pb/g) |
|---|---|---|
| 0.5-1 | 50 | 45 |
| 1-2 | 50 | 45 |
| 2-3 | 50 | 45 |
| 3-4 | 50 | 45 |
| 4-5 | 50 | 45 |
| 5-6 | 50 | 45 |
| 6-7 | 50 | 45 |

*** Alternate Intake ***

| Age | Alternate (µg Pb/day) |
|---|---|
| 0.5-1 | 0 |
| 1-2 | 0 |
| 2-3 | 0 |
| 3-4 | 0 |
| 4-5 | 0 |
| 5-6 | 0 |
| 6-7 | 0 |

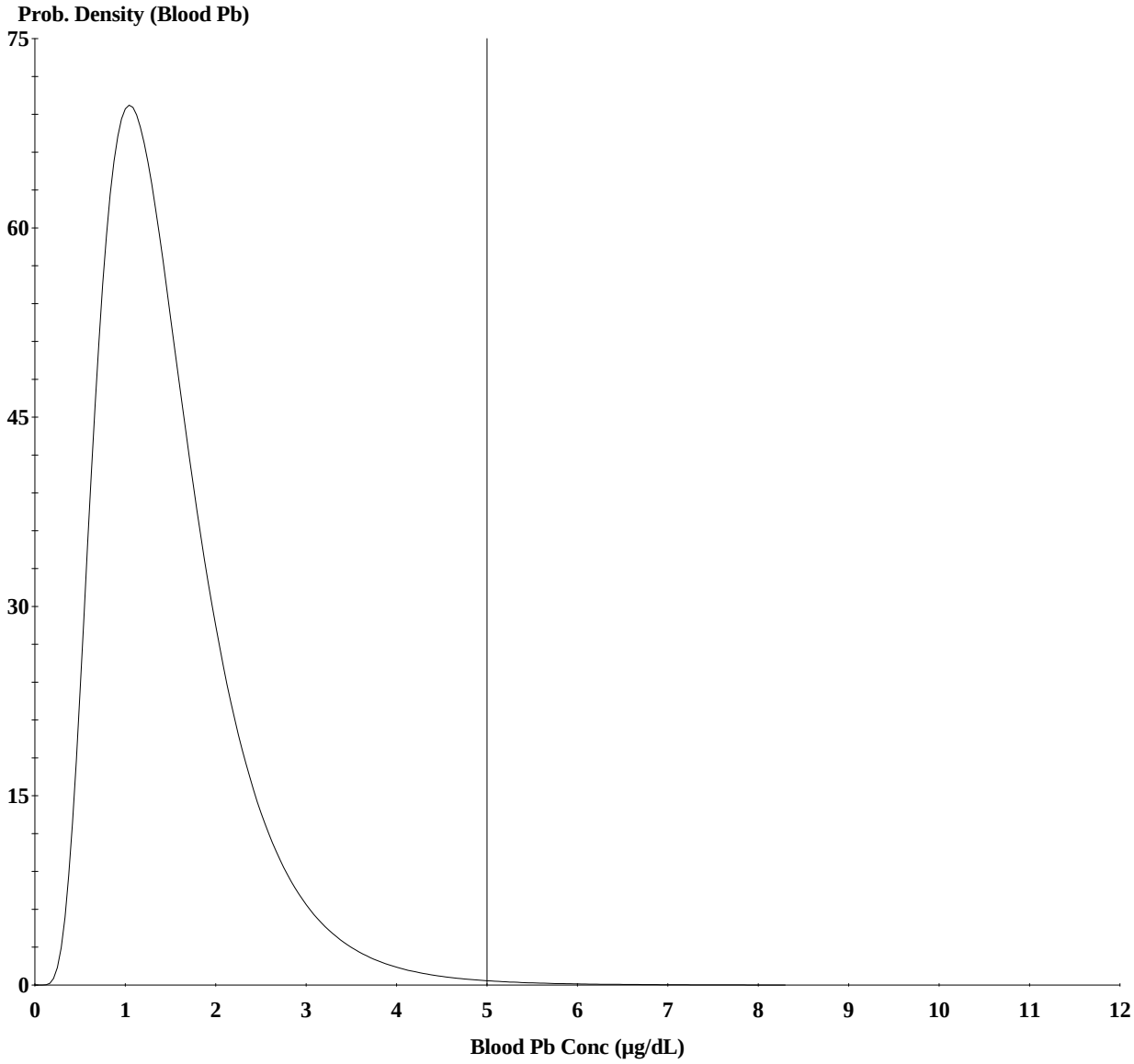
*** Maternal Contribution: Infant Model ***

Maternal Blood Concentration: 0.600 µg Pb/dL

CALCULATED BLOOD LEAD AND LEAD

| Year | Air (µg/day) | Diet (µg/day) | Alternate (µg/day) | Water (µg/day) |
|---|---|---|---|---|
| 0.5-1 | 0.021 | 1.097 | 0 | 0.388 |
| 1-2 | 0.034 | 0.948 | 0 | 0.968 |
| 2-3 | 0.062 | 1.035 | 0 | 1.010 |
| 3-4 | 0.067 | 0.995 | 0 | 1.034 |
| 4-5 | 0.067 | 0.957 | 0 | 1.080 |
| 5-6 | 0.093 | 1.008 | 0 | 1.141 |
| 6-7 | 0.093 | 1.093 | 0 | 1.162 |

| Year | Soil+Dust (µg/day) | Total (µg/day) | Blood (µg/dL) |
|---|---|---|---|
| 0.5-1 | 1.169 | 2.675 | 1.5 |
| 1-2 | 1.852 | 3.802 | 1.6 |
| 2-3 | 1.859 | 3.966 | 1.5 |
| 3-4 | 1.867 | 3.963 | 1.4 |
| 4-5 | 1.391 | 3.495 | 1.2 |
| 5-6 | 1.255 | 3.498 | 1.1 |
| 6-7 | 1.187 | 3.535 | 1 |




**Cutoff = 5.000 µg/dl**
**Geo Mean = 1.358**
**GSD = 1.600**
**% Above = 0.277**
**% Below = 99.723**

**Age Range = User Designated: Ages 12 - 72 months**

**Run Mode = Research**
**Comment = SL rec 12-72 months**

**LEAD MODEL FOR WINDOWS** **Version 1.1**

Model Version: 1.1 Build11
User Name:
Date: 7/1/2017
Site Name: Waterbodies
Operable Unit: **SL Child Swimmer**
Run Mode: Research

*** Air ***

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

| Age | Time Outdoors (hours) | Ventilation Rate ($m^3$/day) | Lung Absorption (%) | Outdoor Air Pb Conc. (µg Pb/$m^3$) |
|---|---|---|---|---|
| 0.5-1 | 1 | 2 | 32 | 0.1 |
| 1-2 | 2 | 3 | 32 | 0.1 |
| 2-3 | 3 | 5 | 32 | 0.1 |
| 3-4 | 4 | 5 | 32 | 0.1 |
| 4-5 | 4 | 5 | 32 | 0.1 |
| 5-6 | 4 | 7 | 32 | 0.1 |
| 6-7 | 4 | 7 | 32 | 0.1 |

*** Diet ***

| Age | Diet Intake (µg/day) |
|---|---|
| 0.5-1 | 2.26 |
| 1-2 | 1.96 |
| 2-3 | 2.13 |
| 3-4 | 2.04 |
| 4-5 | 1.95 |
| 5-6 | 2.05 |
| 6-7 | 2.22 |

*** Drinking Water ***

Drinking Water Concentration: 4.000 µg Pb/L
Water Consumption:

| Age | Water (L/day) |
|---|---|
| 0.5-1 | 0.2 |
| 1-2 | 0.5 |
| 2-3 | 0.52 |
| 3-4 | 0.53 |
| 4-5 | 0.55 |
| 5-6 | 0.58 |
| 6-7 | 0.59 |

*** Soil & Dust ***

Multiple Source Analysis Used
Average multiple source concentration: 129.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.7
Outdoor airborne lead to indoor household dust lead concentration: 100
Use alternate indoor dust Pb sources? No

| Age | Soil (µg Pb/g) | House Dust (µg Pb/g) |
|---|---|---|
| 0.5-1 | 170 | 129 |
| 1-2 | 170 | 129 |
| 2-3 | 170 | 129 |
| 3-4 | 170 | 129 |
| 4-5 | 170 | 129 |
| 5-6 | 170 | 129 |
| 6-7 | 170 | 129 |

*** Alternate Intake ***

| Age | Alternate (µg Pb/day) |
|---|---|
| 0.5-1 | 0 |
| 1-2 | 0 |
| 2-3 | 0 |
| 3-4 | 0 |
| 4-5 | 0 |
| 5-6 | 0 |
| 6-7 | 0 |

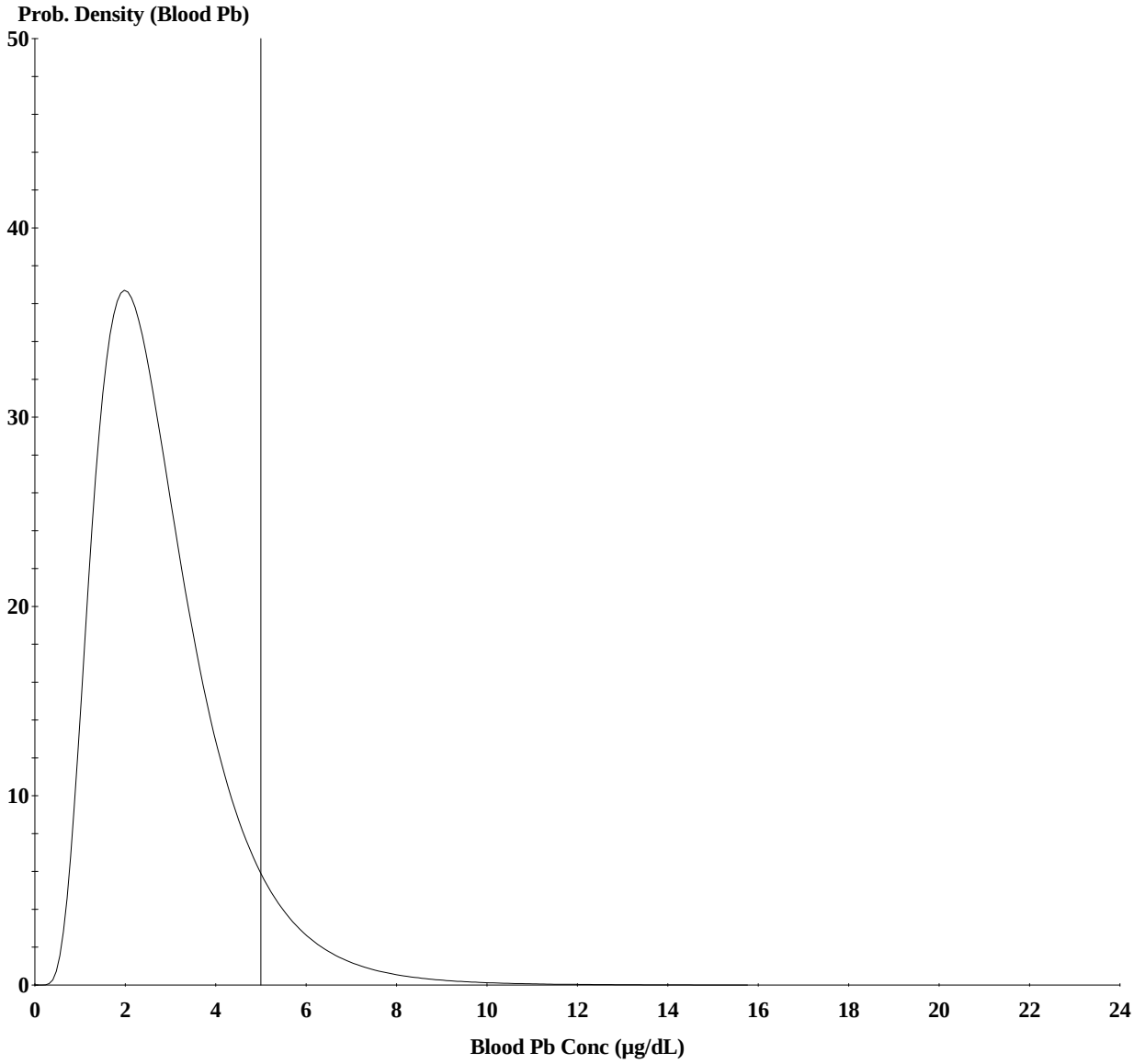
*** Maternal Contribution: Infant Model ***

Maternal Blood Concentration: 0.600 µg Pb/dL

CALCULATED BLOOD LEAD AND LEAD

| Year | Air (µg/day) | Diet (µg/day) | Alternate (µg/day) | Water (µg/day) |
|---|---|---|---|---|
| 0.5-1 | 0.021 | 1.068 | 0 | 0.378 |
| 1-2 | 0.034 | 0.918 | 0 | 0.937 |
| 2-3 | 0.062 | 1.006 | 0 | 0.983 |
| 3-4 | 0.067 | 0.972 | 0 | 1.010 |
| 4-5 | 0.067 | 0.942 | 0 | 1.063 |
| 5-6 | 0.093 | 0.996 | 0 | 1.127 |
| 6-7 | 0.093 | 1.081 | 0 | 1.150 |

| Year | Soil+Dust (µg/day) | Total (µg/day) | Blood (µg/dL) |
|---|---|---|---|
| 0.5-1 | 3.552 | 5.019 | 2.7 |
| 1-2 | 5.594 | 7.483 | 3.1 |
| 2-3 | 5.642 | 7.693 | 2.9 |
| 3-4 | 5.688 | 7.736 | 2.7 |
| 4-5 | 4.274 | 6.346 | 2.3 |
| 5-6 | 3.867 | 6.083 | 1.9 |
| 6-7 | 3.663 | 5.987 | 1.7 |




**Cutoff = 5.000 µg/dl**
**Geo Mean = 2.579**
**GSD = 1.600**
**% Above = 7.947**
**% Below = 92.053**

**Age Range = User Designated: Ages 12 - 72 months**

**Run Mode = Research**
**Comment = SL swimmer 12-72 months**

LEAD MODEL FOR WINDOWS Version 1.1

Model Version: 1.1 Build11
User Name:
Date: 8/13/2017
Site Name: Waterbodies
Operable Unit: **BWL Child Recreator**
Run Mode: Research

*** Air ***

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

| Age | Time Outdoors (hours) | Ventilation Rate ($m^3$/day) | Lung Absorption (%) | Outdoor Air Pb Conc. (µg Pb/$m^3$) |
|---|---|---|---|---|
| 0.5-1 | 1 | 2 | 32 | 0.1 |
| 1-2 | 2 | 3 | 32 | 0.1 |
| 2-3 | 3 | 5 | 32 | 0.1 |
| 3-4 | 4 | 5 | 32 | 0.1 |
| 4-5 | 4 | 5 | 32 | 0.1 |
| 5-6 | 4 | 7 | 32 | 0.1 |
| 6-7 | 4 | 7 | 32 | 0.1 |

*** Diet ***

| Age | Diet Intake (µg/day) |
|---|---|
| 0.5-1 | 2.26 |
| 1-2 | 1.96 |
| 2-3 | 2.13 |
| 3-4 | 2.04 |
| 4-5 | 1.95 |
| 5-6 | 2.05 |
| 6-7 | 2.22 |

*** Drinking Water ***

Drinking Water Concentration: 4.000 µg Pb/L
Water Consumption:

| Age | Water (L/day) |
|---|---|
| 0.5-1 | 0.2 |
| 1-2 | 0.5 |
| 2-3 | 0.52 |
| 3-4 | 0.53 |
| 4-5 | 0.55 |
| 5-6 | 0.58 |
| 6-7 | 0.59 |

*** Soil & Dust ***

Multiple Source Analysis Used
Average multiple source concentration: 446.100 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.7
Outdoor airborne lead to indoor household dust lead concentration: 100
Use alternate indoor dust Pb sources? No

| Age | Soil (µg Pb/g) | House Dust (µg Pb/g) |
|---|---|---|
| 0.5-1 | 623 | 446.1 |
| 1-2 | 623 | 446.1 |
| 2-3 | 623 | 446.1 |
| 3-4 | 623 | 446.1 |
| 4-5 | 623 | 446.1 |
| 5-6 | 623 | 446.1 |
| 6-7 | 623 | 446.1 |

*** Alternate Intake ***

| Age | Alternate (µg Pb/day) |
|---|---|
| 0.5-1 | 0 |
| 1-2 | 0 |
| 2-3 | 0 |
| 3-4 | 0 |
| 4-5 | 0 |
| 5-6 | 0 |
| 6-7 | 0 |

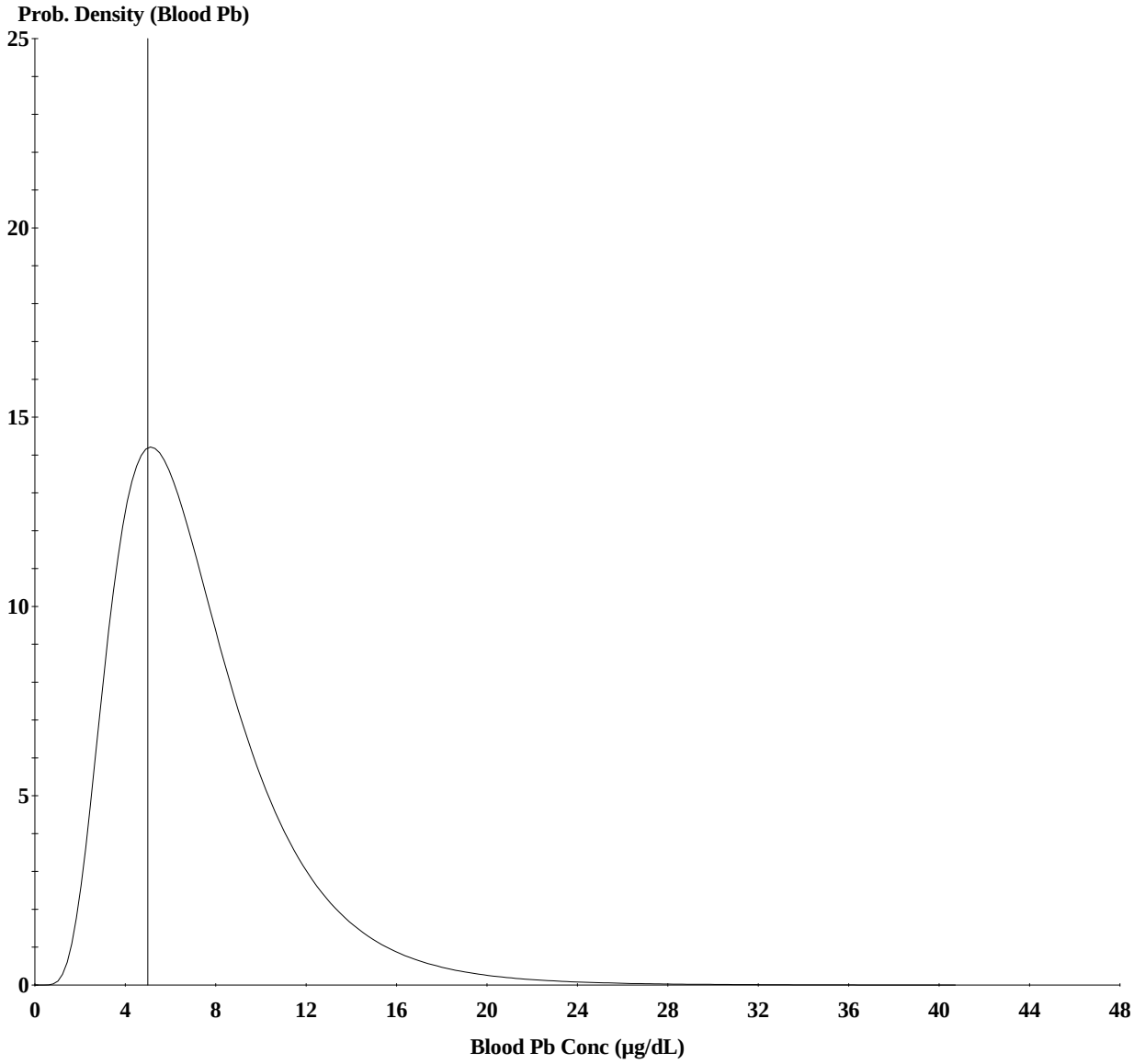
*** Maternal Contribution: Infant Model ***

Maternal Blood Concentration: 0.600 µg Pb/dL

CALCULATED BLOOD LEAD AND LEAD UPTAKES:

| Year | Air (µg/day) | Diet (µg/day) | Alternate (µg/day) | Water (µg/day) |
|---|---|---|---|---|
| 0.5-1 | 0.021 | 0.974 | 0 | 0.345 |
| 1-2 | 0.034 | 0.823 | 0 | 0.839 |
| 2-3 | 0.062 | 0.914 | 0 | 0.893 |
| 3-4 | 0.067 | 0.894 | 0 | 0.929 |
| 4-5 | 0.067 | 0.891 | 0 | 1.005 |
| 5-6 | 0.093 | 0.952 | 0 | 1.077 |
| 6-7 | 0.093 | 1.039 | 0 | 1.105 |

| Year | Soil+Dust (µg/day) | Total (µg/day) | Blood (µg/dL) |
|---|---|---|---|
| 0.5-1 | 11.549 | 12.889 | 6.9 |
| 1-2 | 17.873 | 19.569 | 8 |
| 2-3 | 18.281 | 20.151 | 7.5 |
| 3-4 | 18.653 | 20.542 | 7.1 |
| 4-5 | 14.411 | 16.374 | 5.9 |
| 5-6 | 13.176 | 15.298 | 4.9 |
| 6-7 | 12.551 | 14.789 | 4.3 |




**Cutoff = 5.000 µg/dl**
**Geo Mean = 6.660**
**GSD = 1.600**
**% Above = 72.908**
**% Below = 27.092**

**Age Range = User Designated: Ages 12 - 72 months**

**Run Mode = Research**
**Comment = BWL Recreator**

**LEAD MODEL FOR WINDOWS** **Version 1.1**

| | |
|---|---|
| Model Version: | 1.1 Build11 |
| User Name: | |
| Date: | 7/11/2017 |
| Site Name: | Waterbodies |
| Operable Unit: | **BWL Child Swimmer** |
| Run Mode: | Research |

*** Air ***

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

| Age | Time Outdoors (hours) | Ventilation Rate ($m^3$/day) | Lung Absorption (%) | Outdoor Air Pb Conc. (µg Pb/$m^3$) |
|---|---|---|---|---|
| 0.5-1 | 1 | 2 | 32 | 0.1 |
| 1-2 | 2 | 3 | 32 | 0.1 |
| 2-3 | 3 | 5 | 32 | 0.1 |
| 3-4 | 4 | 5 | 32 | 0.1 |
| 4-5 | 4 | 5 | 32 | 0.1 |
| 5-6 | 4 | 7 | 32 | 0.1 |
| 6-7 | 4 | 7 | 32 | 0.1 |

*** Diet ***

| Age | Diet Intake (µg/day) |
|---|---|
| 0.5-1 | 2.26 |
| 1-2 | 1.96 |
| 2-3 | 2.13 |
| 3-4 | 2.04 |
| 4-5 | 1.95 |
| 5-6 | 2.05 |
| 6-7 | 2.22 |

*** Drinking Water ***

Drinking Water Concentration: 8.700 µg Pb/L
Water Consumption:

| Age | Water (L/day) |
|---|---|
| 0.5-1 | 0.33 |
| 1-2 | 0.63 |
| 2-3 | 0.65 |
| 3-4 | 0.66 |
| 4-5 | 0.68 |
| 5-6 | 0.71 |
| 6-7 | 0.72 |

*** Soil & Dust ***

Multiple Source Analysis Used

| | |
|---|---|
| Average multiple source concentration: | 1049.500 µg/g |
| Mass fraction of outdoor soil to indoor dust conversion factor: | 0.7 |
| Outdoor airborne lead to indoor household dust lead concentration: | 100 |
| Use alternate indoor dust Pb sources? | No |

| Age | Soil (µg Pb/g) | House Dust (µg Pb/g) |
|---|---|---|
| 0.5-1 | 1485 | 1049.5 |
| 1-2 | 1485 | 1049.5 |
| 2-3 | 1485 | 1049.5 |
| 3-4 | 1485 | 1049.5 |
| 4-5 | 1485 | 1049.5 |
| 5-6 | 1485 | 1049.5 |
| 6-7 | 1485 | 1049.5 |

*** Alternate Intake ***

| Age | Alternate (µg Pb/day) |
|---|---|
| 0.5-1 | 0 |
| 1-2 | 0 |
| 2-3 | 0 |
| 3-4 | 0 |
| 4-5 | 0 |
| 5-6 | 0 |
| 6-7 | 0 |

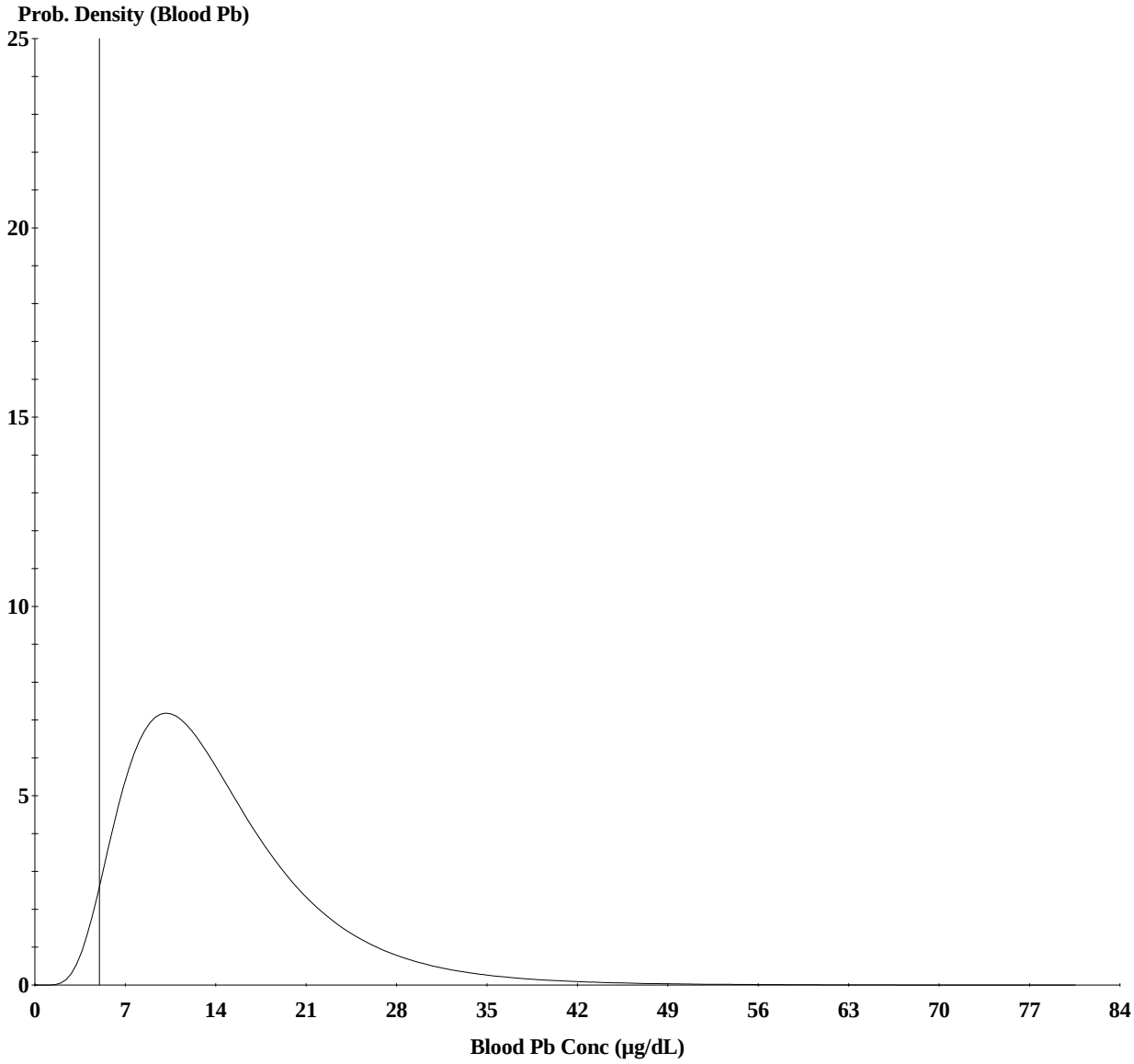
*** Maternal Contribution: Infant Model ***

Maternal Blood Concentration: 0.600 µg Pb/dL

CALCULATED BLOOD LEAD AND LEAD UPTAKES:

| Year | Air (µg/day) | Diet (µg/day) | Alternate (µg/day) | Water (µg/day) |
|---|---|---|---|---|
| 0.5-1 | 0.021 | 0.837 | 0 | 1.063 |
| 1-2 | 0.034 | 0.691 | 0 | 1.932 |
| 2-3 | 0.062 | 0.782 | 0 | 2.075 |
| 3-4 | 0.067 | 0.776 | 0 | 2.185 |
| 4-5 | 0.067 | 0.805 | 0 | 2.441 |
| 5-6 | 0.093 | 0.873 | 0 | 2.632 |
| 6-7 | 0.093 | 0.963 | 0 | 2.717 |

| Year | Soil+Dust (µg/day) | Total (µg/day) | Blood (µg/dL) |
|---|---|---|---|
| 0.5-1 | 23.517 | 25.438 | 13.2 |
| 1-2 | 35.563 | 38.221 | 15.3 |
| 2-3 | 37.021 | 39.94 | 14.5 |
| 3-4 | 38.389 | 41.417 | 14.1 |
| 4-5 | 30.833 | 34.145 | 11.9 |
| 5-6 | 28.654 | 32.253 | 10.1 |
| 6-7 | 27.551 | 31.324 | 9.0 |




**Cutoff = 5.000 µg/dl**
**Geo Mean = 13.178**
**GSD = 1.600**
**% Above = 98.039**
**% Below = 1.961**

**Age Range = User Designated: Ages 12 - 72 months**

**Run Mode = Research**
**Comment = BWL swimmer 12-72 months**

LEAD MODEL FOR WINDOWS Version 1.1

Model Version: 1.1 Build11
User Name:
Date: 8/13/2017
Site Name: Waterbodies
Operable Unit: **HC Child Recreator**
Run Mode: Research

*** Air ***

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

| Age | Time Outdoors (hours) | Ventilation Rate ($m^3$/day) | Lung Absorption (%) | Outdoor Air Pb Conc. (µg Pb/$m^3$) |
|---|---|---|---|---|
| 0.5-1 | 1 | 2 | 32 | 0.1 |
| 1-2 | 2 | 3 | 32 | 0.1 |
| 2-3 | 3 | 5 | 32 | 0.1 |
| 3-4 | 4 | 5 | 32 | 0.1 |
| 4-5 | 4 | 5 | 32 | 0.1 |
| 5-6 | 4 | 7 | 32 | 0.1 |
| 6-7 | 4 | 7 | 32 | 0.1 |

*** Diet ***

| Age | Diet Intake (µg/day) |
|---|---|
| 0.5-1 | 2.26 |
| 1-2 | 1.96 |
| 2-3 | 2.13 |
| 3-4 | 2.04 |
| 4-5 | 1.95 |
| 5-6 | 2.05 |
| 6-7 | 2.22 |

*** Drinking Water ***

Drinking Water Concentration: 4.000 µg Pb/L
Water Consumption:

| Age | Water (L/day) |
|---|---|
| 0.5-1 | 0.2 |
| 1-2 | 0.5 |
| 2-3 | 0.52 |
| 3-4 | 0.53 |
| 4-5 | 0.55 |
| 5-6 | 0.58 |
| 6-7 | 0.59 |

*** Soil & Dust ***

Multiple Source Analysis Used
Average multiple source concentration: 2888.400 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.7
Outdoor airborne lead to indoor household dust lead concentration: 100
Use alternate indoor dust Pb sources? No

| Age | Soil (µg Pb/g) | House Dust (µg Pb/g) |
|---|---|---|
| 0.5-1 | 4112 | 2888.4 |
| 1-2 | 4112 | 2888.4 |
| 2-3 | 4112 | 2888.4 |
| 3-4 | 4112 | 2888.4 |
| 4-5 | 4112 | 2888.4 |
| 5-6 | 4112 | 2888.4 |
| 6-7 | 4112 | 2888.4 |

*** Alternate Intake ***

| Age | Alternate (µg Pb/day) |
|---|---|
| 0.5-1 | 0 |
| 1-2 | 0 |
| 2-3 | 0 |
| 3-4 | 0 |
| 4-5 | 0 |
| 5-6 | 0 |
| 6-7 | 0 |

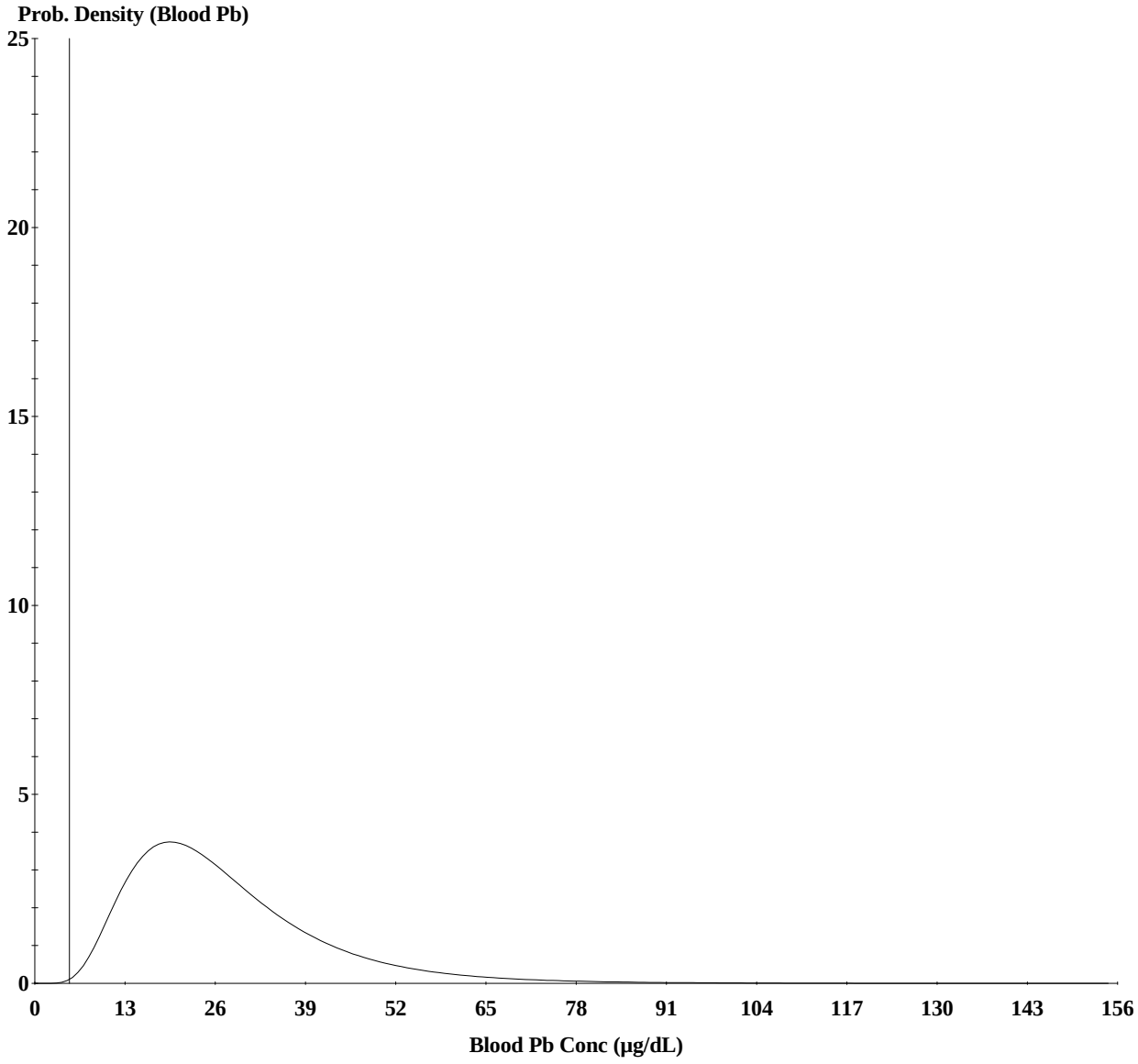
*** Maternal Contribution: Infant Model ***

Maternal Blood Concentration: 0.600 µg Pb/dL

CALCULATED BLOOD LEAD AND LEAD UPTAKES:

| Year | Air (µg/day) | Diet (µg/day) | (µg/day) | Water (µg/day) |
|---|---|---|---|---|
| 0.5-1 | 0.021 | 0.629 | 0 | 0.223 |
| 1-2 | 0.034 | 0.507 | 0 | 0.517 |
| 2-3 | 0.062 | 0.584 | 0 | 0.57 |
| 3-4 | 0.067 | 0.591 | 0 | 0.614 |
| 4-5 | 0.067 | 0.651 | 0 | 0.734 |
| 5-6 | 0.093 | 0.727 | 0 | 0.823 |
| 6-7 | 0.093 | 0.815 | 0 | 0.867 |

| Year | Soil+Dust (µg/day) | Total (µg/day) | Blood (µg/dL) |
|---|---|---|---|
| 0.5-1 | 48.789 | 49.661 | 24.7 |
| 1-2 | 72.033 | 73.091 | 28.5 |
| 2-3 | 76.386 | 77.602 | 27.2 |
| 3-4 | 80.726 | 81.999 | 26.9 |
| 4-5 | 68.837 | 70.288 | 23.5 |
| 5-6 | 65.854 | 67.497 | 20.5 |
| 6-7 | 64.428 | 66.204 | 18.5 |




**Cutoff = 5.000 µg/dl**
**Geo Mean = 25.298**
**GSD = 1.600**
**% Above = 99.972**
**% Below = 0.028**

**Age Range = User Designated: Ages 12 - 72 months**

**Run Mode = Research**
**Comment = HC Recreator**

LEAD MODEL FOR WINDOWS Version 1.1

Model Version: 1.1 Build11
User Name:
Date: 8/13/2017
Site Name: Waterbodies
Operable Unit: **KWL Child Recreator**
Run Mode: Research

*** Air ***

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

| Age | Time Outdoors (hours) | Ventilation Rate ($m^3$/day) | Lung Absorption (%) | Outdoor Air Pb Conc. (µg Pb/$m^3$) |
|---|---|---|---|---|
| 0.5-1 | 1 | 2 | 32 | 0.1 |
| 1-2 | 2 | 3 | 32 | 0.1 |
| 2-3 | 3 | 5 | 32 | 0.1 |
| 3-4 | 4 | 5 | 32 | 0.1 |
| 4-5 | 4 | 5 | 32 | 0.1 |
| 5-6 | 4 | 7 | 32 | 0.1 |
| 6-7 | 4 | 7 | 32 | 0.1 |

*** Diet ***

| Age | Diet Intake (µg/day) |
|---|---|
| 0.5-1 | 2.26 |
| 1-2 | 1.96 |
| 2-3 | 2.13 |
| 3-4 | 2.04 |
| 4-5 | 1.95 |
| 5-6 | 2.05 |
| 6-7 | 2.22 |

*** Drinking Water ***

Drinking Water Concentration: 4.000 µg Pb/L
Water Consumption:

| Age | Water (L/day) |
|---|---|
| 0.5-1 | 0.2 |
| 1-2 | 0.5 |
| 2-3 | 0.52 |
| 3-4 | 0.53 |
| 4-5 | 0.55 |
| 5-6 | 0.58 |
| 6-7 | 0.59 |

*** Soil & Dust ***

Multiple Source Analysis Used

| | |
|---|---|
| Average multiple source concentration: | 367.000 µg/g |
| Mass fraction of outdoor soil to indoor dust conversion factor: | 0.7 |
| Outdoor airborne lead to indoor household dust lead concentration: | 100 |
| Use alternate indoor dust Pb sources? | No |

| Age | Soil (µg Pb/g) | House Dust (µg Pb/g) |
|---|---|---|
| 0.5-1 | 510 | 367 |
| 1-2 | 510 | 367 |
| 2-3 | 510 | 367 |
| 3-4 | 510 | 367 |
| 4-5 | 510 | 367 |
| 5-6 | 510 | 367 |
| 6-7 | 510 | 367 |

*** Alternate Intake ***

| Age | Alternate (µg Pb/day) |
|---|---|
| 0.5-1 | 0 |
| 1-2 | 0 |
| 2-3 | 0 |
| 3-4 | 0 |
| 4-5 | 0 |
| 5-6 | 0 |
| 6-7 | 0 |

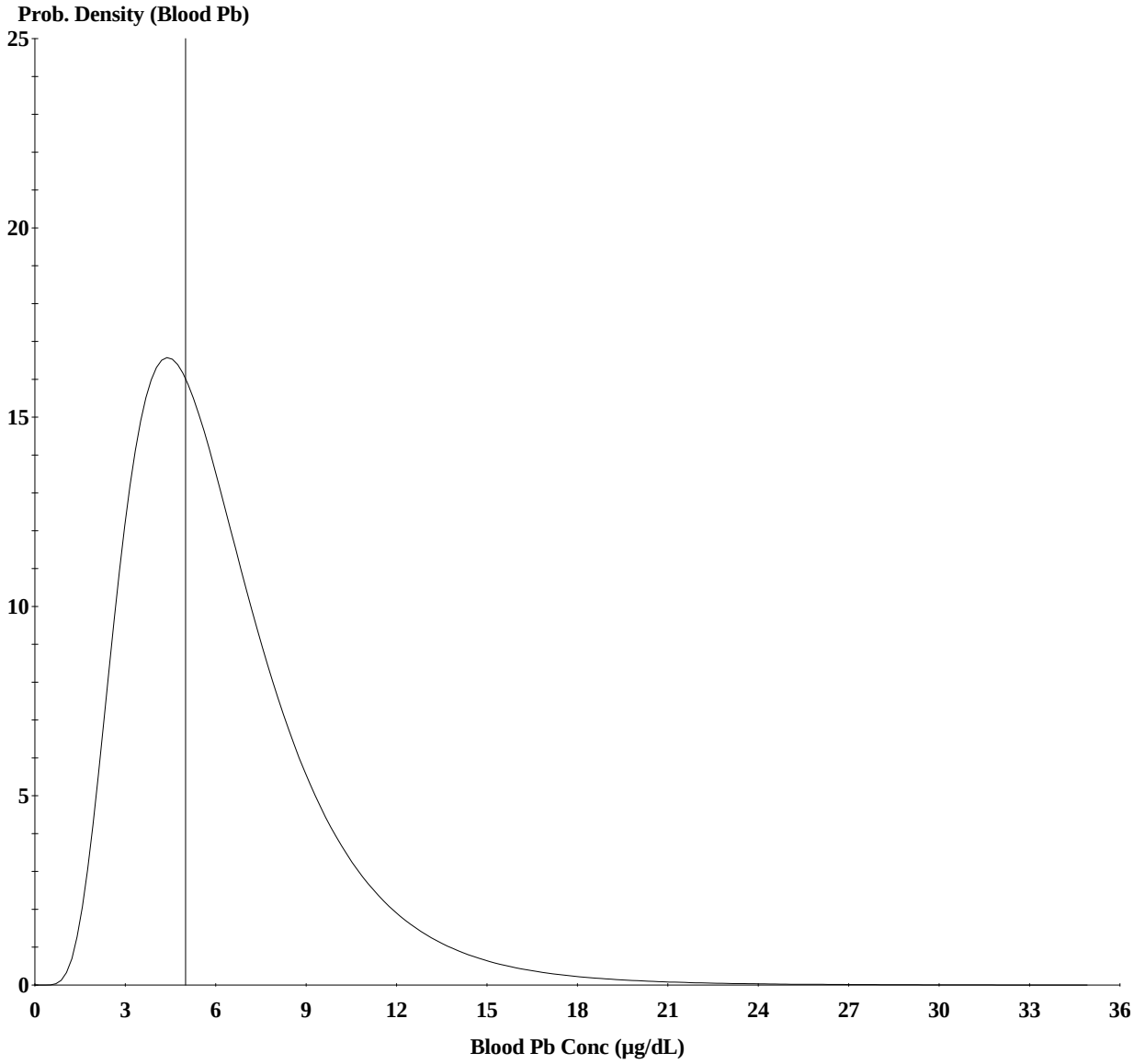
*** Maternal Contribution: Infant Model ***

Maternal Blood Concentration: 0.600 µg Pb/dL

CALCULATED BLOOD LEAD AND LEAD UPTAKES:

| Year | Air (µg/day) | Diet (µg/day) | Alternate (µg/day) | Water (µg/day) |
|---|---|---|---|---|
| 0.5-1 | 0.021 | 0.995 | 0 | 0.352 |
| 1-2 | 0.034 | 0.844 | 0 | 0.861 |
| 2-3 | 0.062 | 0.935 | 0 | 0.913 |
| 3-4 | 0.067 | 0.912 | 0 | 0.947 |
| 4-5 | 0.067 | 0.903 | 0 | 1.019 |
| 5-6 | 0.093 | 0.962 | 0 | 1.089 |
| 6-7 | 0.093 | 1.049 | 0 | 1.116 |

| Year | Soil+Dust (µg/day) | Total (µg/day) | Blood (µg/dL) |
|---|---|---|---|
| 0.5-1 | 9.685 | 11.053 | 5.9 |
| 1-2 | 15.046 | 16.785 | 6.9 |
| 2-3 | 15.342 | 17.253 | 6.4 |
| 3-4 | 15.612 | 17.538 | 6.1 |
| 4-5 | 11.985 | 13.974 | 5 |
| 5-6 | 10.931 | 13.076 | 4.2 |
| 6-7 | 10.399 | 12.657 | 3.7 |




**Cutoff = 5.000 µg/dl**
**Geo Mean = 5.711**
**GSD = 1.600**
**% Above = 61.136**
**% Below = 38.864**

**Age Range = User Designated: Ages 12 - 72 months**

**KWL Child Recreator**
**Run Mode = Research**

**LEAD MODEL FOR WINDOWS** **Version 1.1**

| | |
|---|---|
| Model Version: | 1.1 Build11 |
| User Name: | |
| Date: | 7/11/2017 |
| Site Name: | Waterbodies |
| Operable Unit: | **KWL Child Swimmer** |
| Run Mode: | Research |

*** Air ***

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

| Age | Time Outdoors (hours) | Ventilation Rate ($m^3$/day) | Lung Absorption (%) | Outdoor Air Pb Conc. (µg Pb/$m^3$) |
|---|---|---|---|---|
| 0.5-1 | 1 | 2 | 32 | 0.1 |
| 1-2 | 2 | 3 | 32 | 0.1 |
| 2-3 | 3 | 5 | 32 | 0.1 |
| 3-4 | 4 | 5 | 32 | 0.1 |
| 4-5 | 4 | 5 | 32 | 0.1 |
| 5-6 | 4 | 7 | 32 | 0.1 |
| 6-7 | 4 | 7 | 32 | 0.1 |

*** Diet ***

| Age | Diet Intake (µg/day) |
|---|---|
| 0.5-1 | 2.26 |
| 1-2 | 1.96 |
| 2-3 | 2.13 |
| 3-4 | 2.04 |
| 4-5 | 1.95 |
| 5-6 | 2.05 |
| 6-7 | 2.22 |

*** Drinking Water ***

Drinking Water Concentration: 9.300 µg Pb/L
Water Consumption:

| Age | Water (L/day) |
|---|---|
| 0.5-1 | 0.33 |
| 1-2 | 0.63 |
| 2-3 | 0.65 |
| 3-4 | 0.66 |
| 4-5 | 0.68 |
| 5-6 | 0.71 |
| 6-7 | 0.72 |

*** Soil & Dust ***

Multiple Source Analysis Used

| | |
|---|---|
| Average multiple source concentration: | 720.500 µg/g |
| Mass fraction of outdoor soil to indoor dust conversion factor: | 0.7 |
| Outdoor airborne lead to indoor household dust lead concentration: | 100 |
| Use alternate indoor dust Pb sources? | No |

| Age | Soil (µg Pb/g) | House Dust (µg Pb/g) |
|---|---|---|
| 0.5-1 | 1015 | 720.5 |
| 1-2 | 1015 | 720.5 |
| 2-3 | 1015 | 720.5 |
| 3-4 | 1015 | 720.5 |
| 4-5 | 1015 | 720.5 |
| 5-6 | 1015 | 720.5 |
| 6-7 | 1015 | 720.5 |

*** Alternate Intake ***

| Age | Alternate (µg Pb/day) |
|---|---|
| 0.5-1 | 0 |
| 1-2 | 0 |
| 2-3 | 0 |
| 3-4 | 0 |
| 4-5 | 0 |
| 5-6 | 0 |
| 6-7 | 0 |

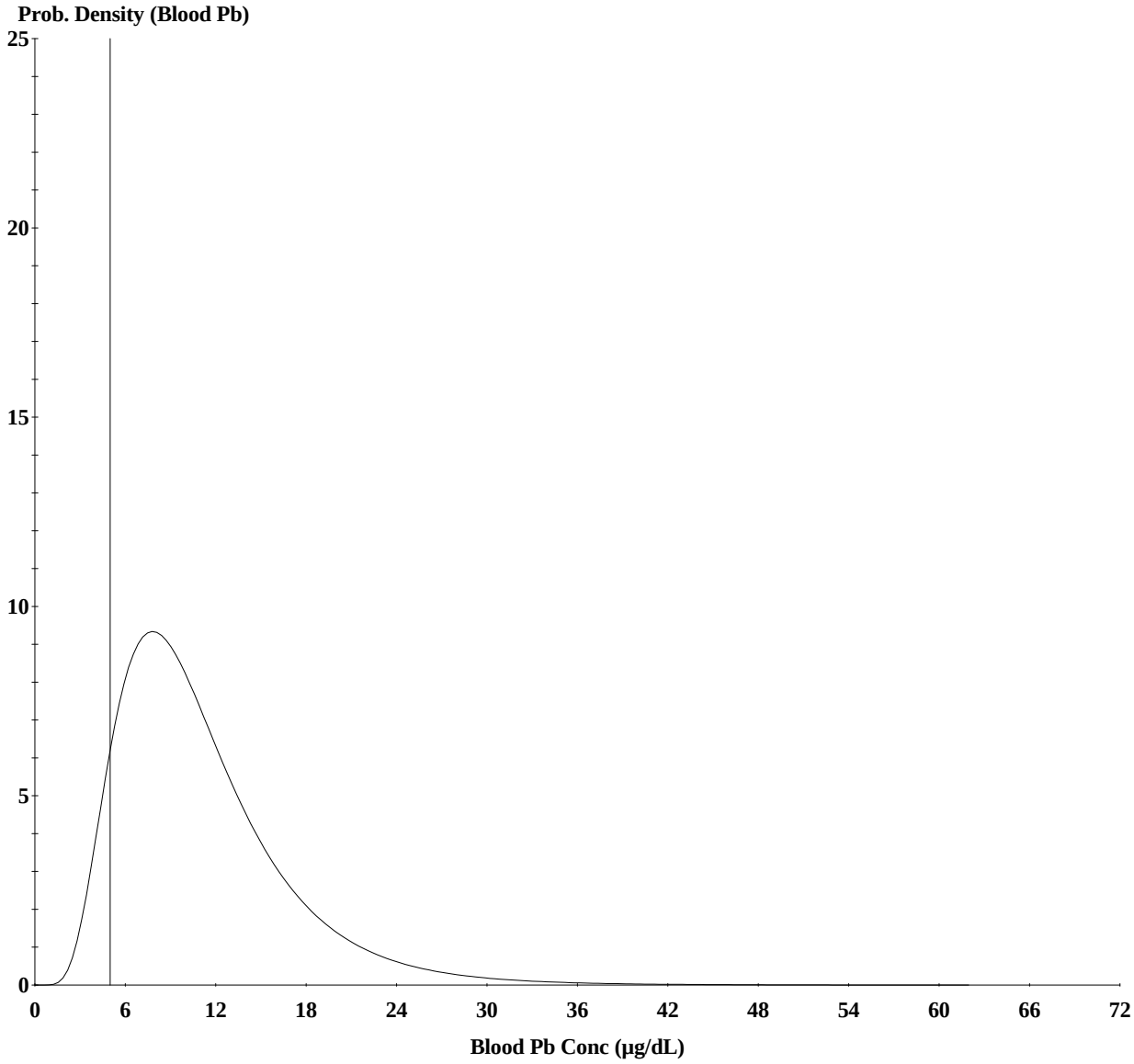
*** Maternal Contribution: Infant Model ***

Maternal Blood Concentration: 0.600 µg Pb/dL

CALCULATED BLOOD LEAD AND LEAD UPTAKES:

| Year | Air (µg/day) | Diet (µg/day) | Alternate (µg/day) | Water (µg/day) |
|---|---|---|---|---|
| 0.5-1 | 0.021 | 0.900 | 0 | 1.22 |
| 1-2 | 0.034 | 0.750 | 0 | 2.24 |
| 2-3 | 0.062 | 0.842 | 0 | 2.39 |
| 3-4 | 0.067 | 0.830 | 0 | 2.50 |
| 4-5 | 0.067 | 0.844 | 0 | 2.74 |
| 5-6 | 0.093 | 0.909 | 0 | 2.93 |
| 6-7 | 0.093 | 0.998 | 0 | 3.01 |

| Year | Soil+Dust (µg/day) | Total (µg/day) | Blood (µg/dL) |
|---|---|---|---|
| 0.5-1 | 17.32 | 19.46 | 10.2 |
| 1-2 | 26.45 | 29.47 | 11.9 |
| 2-3 | 27.32 | 30.61 | 11.2 |
| 3-4 | 28.12 | 31.52 | 10.8 |
| 4-5 | 22.16 | 25.81 | 9.1 |
| 5-6 | 20.43 | 24.36 | 7.7 |
| 6-7 | 19.55 | 23.66 | 6.8 |




**Cutoff = 5.000 µg/dl**
**Geo Mean = 10.136**
**GSD = 1.600**
**% Above = 93.364**
**% Below = 6.636**

**Age Range = User Designated: Ages 12 - 72 months**

**Run Mode = Research**
**Comment = KWL swimmer 12-72 months**

LEAD MODEL FOR WINDOWS Version 1.1

Model Version: 1.1 Build11
User Name:
Date: 8/8/2017
Site Name: Waterbodies
Operable Unit: **KWL Angler Baseline**
Run Mode: Research

*** Air ***

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

| Age | Time Outdoors (hours) | Ventilation Rate ($m^3$/day) | Lung Absorption (%) | Outdoor Air Pb Conc. (µg Pb/$m^3$) |
|---|---|---|---|---|
| 0.5-1 | 1 | 2 | 32 | 0.1 |
| 1-2 | 2 | 3 | 32 | 0.1 |
| 2-3 | 3 | 5 | 32 | 0.1 |
| 3-4 | 4 | 5 | 32 | 0.1 |
| 4-5 | 4 | 5 | 32 | 0.1 |
| 5-6 | 4 | 7 | 32 | 0.1 |
| 6-7 | 4 | 7 | 32 | 0.1 |

*** Diet ***

| Age | Diet Intake (µg/day) |
|---|---|
| 0.5-1 | 2.26 |
| 1-2 | 1.96 |
| 2-3 | 2.13 |
| 3-4 | 2.04 |
| 4-5 | 1.95 |
| 5-6 | 2.05 |
| 6-7 | 2.22 |

*** Drinking Water ***

Drinking Water Concentration: 4.000 µg Pb/L
Water Consumption:

| Age | Water (L/day) |
|---|---|
| 0.5-1 | 0.2 |
| 1-2 | 0.5 |
| 2-3 | 0.52 |
| 3-4 | 0.53 |
| 4-5 | 0.55 |
| 5-6 | 0.58 |
| 6-7 | 0.59 |

*** Soil & Dust ***

Multiple Source Analysis Used

| | |
|---|---|
| Average multiple source concentration: | 367.000 µg/g |
| Mass fraction of outdoor soil to indoor dust conversion factor: | 0.7 |
| Outdoor airborne lead to indoor household dust lead concentration: | 100 |
| Use alternate indoor dust Pb sources? | No |

| Age | Soil (µg Pb/g) | House Dust (µg Pb/g) |
|---|---|---|
| 0.5-1 | 510 | 367 |
| 1-2 | 510 | 367 |
| 2-3 | 510 | 367 |
| 3-4 | 510 | 367 |
| 4-5 | 510 | 367 |
| 5-6 | 510 | 367 |
| 6-7 | 510 | 367 |

*** Alternate Intake ***

| Age | Alternate (µg Pb/day) |
|---|---|
| 0.5-1 | 0 |
| 1-2 | 0 |
| 2-3 | 0 |
| 3-4 | 0 |
| 4-5 | 0 |
| 5-6 | 0 |
| 6-7 | 0 |

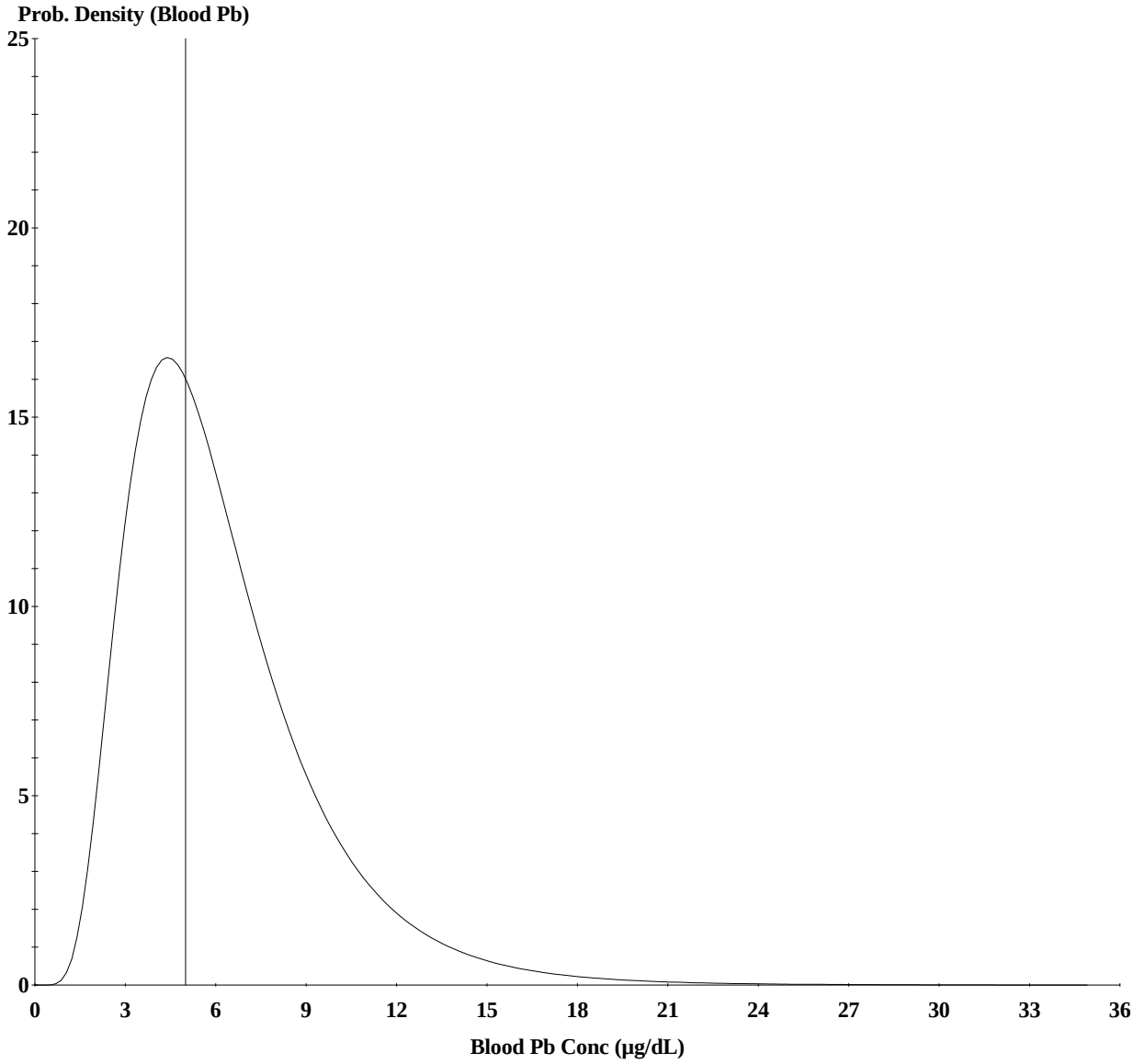
*** Maternal Contribution: Infant Model ***

Maternal Blood Concentration: 0.600 µg Pb/dL

CALCULATED BLOOD LEAD AND LEAD UPTAKES:

| Year | Air (µg/day) | Diet (µg/day) | (µg/day) | Water (µg/day) |
|---|---|---|---|---|
| 0.5-1 | 0.021 | 0.995 | 0 | 0.352 |
| 1-2 | 0.034 | 0.844 | 0 | 0.861 |
| 2-3 | 0.062 | 0.935 | 0 | 0.913 |
| 3-4 | 0.067 | 0.912 | 0 | 0.947 |
| 4-5 | 0.067 | 0.903 | 0 | 1.019 |
| 5-6 | 0.093 | 0.962 | 0 | 1.089 |
| 6-7 | 0.093 | 1.049 | 0 | 1.116 |

| Year | Soil+Dust (µg/day) | Total (µg/day) | Blood (µg/dL) |
|---|---|---|---|
| 0.5-1 | 9.685 | 11.053 | 5.9 |
| 1-2 | 15.046 | 16.785 | 6.9 |
| 2-3 | 15.342 | 17.253 | 6.4 |
| 3-4 | 15.612 | 17.538 | 6.1 |
| 4-5 | 11.985 | 13.974 | 5 |
| 5-6 | 10.931 | 13.076 | 4.2 |
| 6-7 | 10.399 | 12.657 | 3.7 |




**Cutoff = 5.000 µg/dl**
**Geo Mean = 5.711**
**GSD = 1.600**
**% Above = 61.136**
**% Below = 38.864**

**Age Range = User Designated: Ages 12 - 72 months**

**Run Mode = Research**
**Comment = Angler Baseline soil/sed only**

LEAD MODEL FOR WINDOWS Version 1.1

Model Version: 1.1 Build11
User Name:
Date: 8/8/2017
Site Name: Waterbodies
Operable Unit: **KWL Angler**
Run Mode: Research

*** Air ***

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

| Age | Time Outdoors (hours) | Ventilation Rate ($m^3$/day) | Lung Absorption (%) | Outdoor Air Pb Conc. (µg Pb/$m^3$) |
|---|---|---|---|---|
| 0.5-1 | 1 | 2 | 32 | 0.1 |
| 1-2 | 2 | 3 | 32 | 0.1 |
| 2-3 | 3 | 5 | 32 | 0.1 |
| 3-4 | 4 | 5 | 32 | 0.1 |
| 4-5 | 4 | 5 | 32 | 0.1 |
| 5-6 | 4 | 7 | 32 | 0.1 |
| 6-7 | 4 | 7 | 32 | 0.1 |

*** Diet ***

| Age | Diet Intake (µg/day) |
|---|---|
| 0.5-1 | 2.373 |
| 1-2 | 2.276 |
| 2-3 | 2.536 |
| 3-4 | 2.473 |
| 4-5 | 2.411 |
| 5-6 | 2.546 |
| 6-7 | 2.795 |

Alternative Dietary Values

| | | |
|---|---|---|
| Home grown fruits concentration: | 0.000 µg/g | |
| Home grown vegetables concentration: | 0.000 µg/g | |
| Fish from fishing concentration: | 0.110 µg/g | |
| Game animals from hunting concentration: | 0.000 µg/g | |
| Home grown fruits factor: | 0 | % of all fruits |
| Home grown vegetables factor: | 0 | % of all vegetables |
| Fish from fishing factor: | 10 | %of all meat |
| Game animals from hunting factor: | 0 | % of all meat |

*** Drinking Water ***

| | |
|---|---|
| Drinking Water Concentration: | 4.000 µg Pb/L |
| Water Consumption: | |

| Age | Water (L/day) |
|---|---|
| 0.5-1 | 0.2 |
| 1-2 | 0.5 |
| 2-3 | 0.52 |
| 3-4 | 0.53 |
| 4-5 | 0.55 |
| 5-6 | 0.58 |
| 6-7 | 0.59 |

*** Soil & Dust ***

| | |
|---|---|
| Multiple Source Analysis Used | |
| Average multiple source concentration: | 367.000 µg/g |
| | |
| Mass fraction of outdoor soil to indoor dust conversion factor: | 0.7 |
| Outdoor airborne lead to indoor household dust lead concentration: | 100 |
| Use alternate indoor dust Pb sources? | No |

| Age | Soil (µg Pb/g) | House Dust (µg Pb/g) |
|---|---|---|
| 0.5-1 | 510 | 367 |
| 1-2 | 510 | 367 |
| 2-3 | 510 | 367 |
| 3-4 | 510 | 367 |
| 4-5 | 510 | 367 |
| 5-6 | 510 | 367 |
| 6-7 | 510 | 367 |

*** Alternate Intake ***

| Age | Alternate (µg Pb/day) |
|---|---|
| 0.5-1 | 0 |
| 1-2 | 0 |
| 2-3 | 0 |
| 3-4 | 0 |
| 4-5 | 0 |
| 5-6 | 0 |
| 6-7 | 0 |

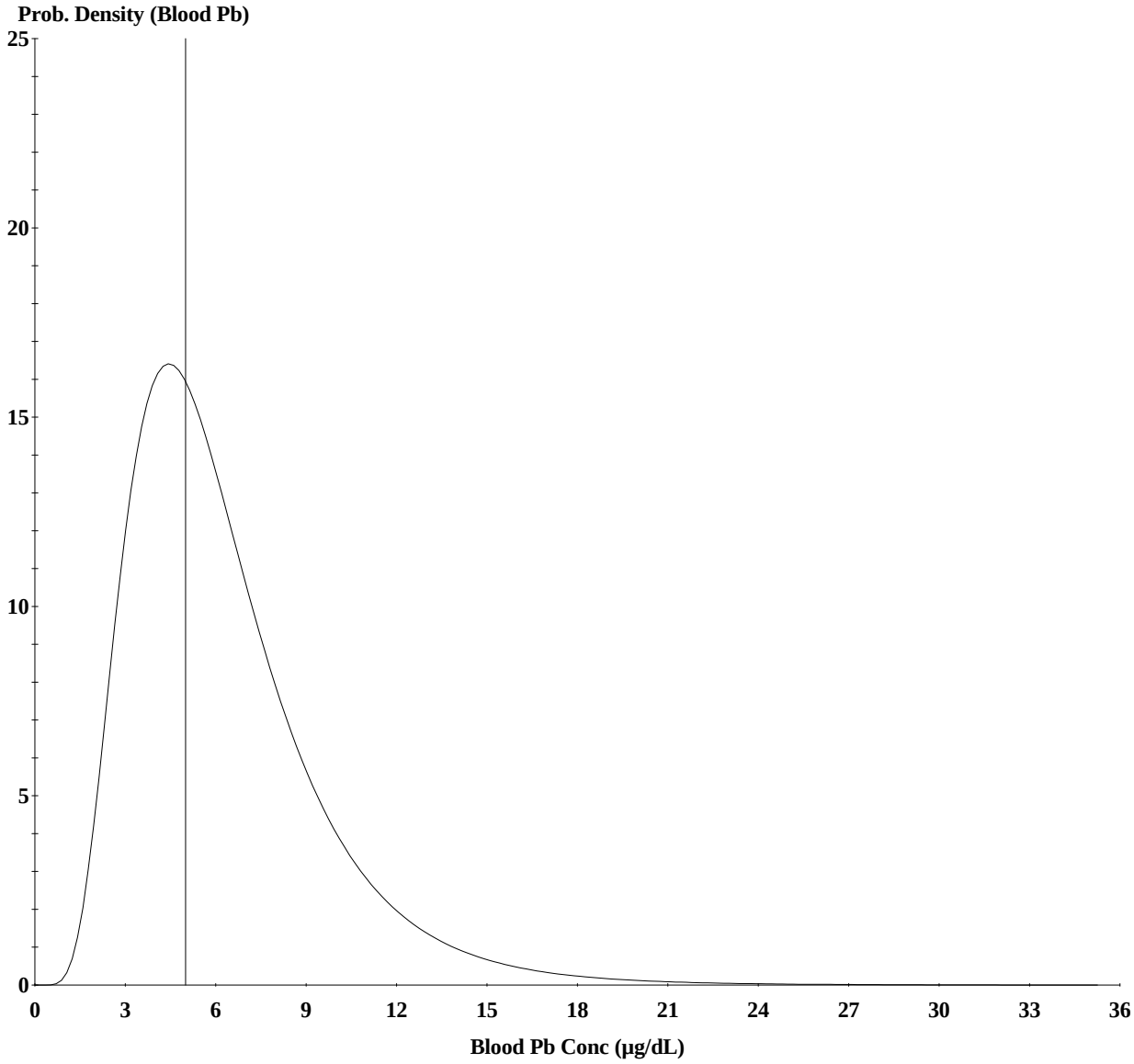
*** Maternal Contribution: Infant Model ***

Maternal Blood Concentration: 0.600 µg Pb/dL

CALCULATED BLOOD LEAD AND LEAD UPTAKES:

| Year | Air (µg/day) | Diet (µg/day) | Alternate (µg/day) | Water (µg/day) |
|---|---|---|---|---|
| 0.5-1 | 0.021 | 1.044 | 0 | 0.352 |
| 1-2 | 0.034 | 0.979 | 0 | 0.86 |
| 2-3 | 0.062 | 1.112 | 0 | 0.912 |
| 3-4 | 0.067 | 1.104 | 0 | 0.946 |
| 4-5 | 0.067 | 1.115 | 0 | 1.018 |
| 5-6 | 0.093 | 1.194 | 0 | 1.088 |
| 6-7 | 0.093 | 1.32 | 0 | 1.114 |

| Year | Soil+Dust (µg/day) | Total (µg/day) | Blood (µg/dL) |
|---|---|---|---|
| 0.5-1 | 9.68 | 11.097 | 5.9 |
| 1-2 | 15.029 | 16.903 | 6.9 |
| 2-3 | 15.323 | 17.41 | 6.5 |
| 3-4 | 15.594 | 17.711 | 6.2 |
| 4-5 | 11.972 | 14.171 | 5.1 |
| 5-6 | 10.92 | 13.294 | 4.2 |
| 6-7 | 10.386 | 12.914 | 3.7 |




**Cutoff = 5.000 µg/dl**
**Geo Mean = 5.768**
**GSD = 1.600**
**% Above = 61.939**
**% Below = 38.061**

**Age Range = User Designated: Ages 12 - 72 months**

**Run Mode = Research**
**Comment = Angler with fish**

# Model Output with Alternate Soil/Sediment Weighting

## Alternative Weighted Mean Lead EPCs for Recreators

| Exposure Area | Exposed Media | Soil Arithmetic Mean (mg/kg) | Sediment Arithmetic Mean (mg/kg) | EF Soil (days/year) | EF Sediment (days/year) | Weighted EPC (mg/kg) | Alternative Weighted EPC (mg/kg) |
|---|---|---|---|---|---|---|---|
| BWL | Soil (0-2 ft bgs) + Sediment (0-0.5 ft bgs) | 188 | 1,485 | 150 | 44 | 623 | 378 |
| HC | Soil (0-2 ft bgs) + Sediment (0-0.5 ft bgs) | 3,273 | 2,860 | 150 | 44 | 4112 | 3213 |
| KWL | Soil (0-2 ft bgs) + Sediment (0-0.5 ft bgs) | 213 | 1,015 | 150 | 44 | 510 | 330 |

Notes:

Weighted EPC = ([soil EPC × 150 days/year] + [sediment EPC × 44 days/year])/(150 days/year).

Alternative weighted EPC = ([soil EPC × 106 days/year] + [mean of soil & sediment EPC] × 44 days/year])/(150 days/year)

**Adult Lead Model with Alternative Weighted Mean EPCs**

| Description of Variable | Receptor | Recreator | Recreator | Recreator |
|---|---|---|---|---|
| | Depth | 0-2 ft | 0-2 ft | 0-2 ft |
| | Exp. Area | BWL | HC | KWL |
| Soil/sediment lead concentration ($Pb_S$) | µg/g or ppm | 378 | 3,213 | 330 |
| Fetal/maternal PbB ratio | -- | 0.9 | 0.9 | 0.9 |
| Biokinetic slope factor | µg/dL per µg/day | 0.4 | 0.4 | 0.4 |
| Geometric standard deviation PbB (GSD)[1] | -- | 1.8 | 1.8 | 1.8 |
| Baseline blood lead level ($PbB_0$)[1] | µg/dL | 0.6 | 0.6 | 0.6 |
| Soil ingestion rate (IR) (including soil-derived indoor dust) | g/day | 0.05 | 0.05 | 0.05 |
| Total ingestion rate of outdoor soil and indoor dust | g/day | -- | -- | -- |
| Weighting factor; fraction of $IR_{S+D}$ ingested as outdoor soil | -- | -- | -- | -- |
| Mass fraction of soil in dust | -- | -- | -- | -- |
| Absorption fraction (same for soil and dust) | -- | 0.12 | 0.12 | 0.12 |
| Exposure frequency (same for soil and dust) | days/year | 150 | 150 | 150 |
| Averaging time (same for soil and dust) | days/year | 365 | 365 | 365 |
| **PbB of adult receptor, geometric mean** | µg/dL | 1.0 | 3.8 | 0.9 |
| 95$^{th}$ percentile PbB among fetuses of adult receptors | µg/dL | 2.3 | 8.9 | 2.2 |
| Target PbB level of concern (*e.g* ., 10 µg/dL) | µg/dL | 5 | 5 | 5 |
| **Probability that fetal PbB > $PbB_t$, assuming lognormal distribution** | **%** | 0.2% | **25%** | 0.1% |

| Description of Variable | Receptor | Angler with Fish | Angler Without Fish |
|---|---|---|---|
| | Depth | 0-2 ft | 0-2 ft |
| | Exp. Area | KWL | KWL |
| Soil/sediment lead concentration ($Pb_S$) | µg/g or ppm | 330 | 330 |
| Fish lead concentration ($Pb_F$) | µg/g or ppm | 0.11 | 0 |
| Fetal/maternal PbB ratio | -- | 0.9 | 0.9 |
| Biokinetic slope factor | µg/dL per µg/day | 0.4 | 0.4 |
| Geometric standard deviation PbB (GSD)[1] | -- | 1.8 | 1.8 |
| Baseline blood lead level ($PbB_0$)[1] | µg/dL | 0.6 | 0.6 |
| Soil/sediment ingestion rate ($IR_S$) | g/day | 0.05 | 0.05 |
| Fish ingestion rate ($IR_F$) | g/day | 26 | 0 |
| Absorption fraction for soil/sediment | -- | 0.12 | 0.12 |
| Absorption fraction for fish[2] | -- | 0.20 | 0.20 |
| Exposure frequency for soil/sediment | days/year | 150 | 150 |
| Exposure frequency for fish | days/year | 365 | 365 |
| Averaging time for soil/sediment | days/year | 365 | 365 |
| Averaging time for fish | days/year | 365 | 365 |
| **PbB of adult receptor, geometric mean** | µg/dL | 1.2 | 0.9 |
| 95$^{th}$ percentile PbB among fetuses of adult receptors | µg/dL | 2.7 | 2.2 |
| Target PbB level of concern (*e.g* ., 10 µg/dL) | µg/dL | 5 | 5 |
| **Probability that fetal PbB > $PbB_t$, assuming lognormal distribution** | **%** | 0.4% | 0.1% |

Notes:

Source – US EPA (2003a).

(1) Baseline blood lead level ($PbB_0$) and geometric standard deviation (GSD) derived from US EPA (2017c).

(2) Absorption fraction for fish is based on a relative bioavailability of 1 and an absorption fraction for soluble lead of 0.20 (US EPA, 2003a).

**LEAD MODEL FOR WINDOWS** **Version 1.1**

Model Version: 1.1 Build11
User Name:
Date: 7/14/2017
Site Name: Waterbodies
Operable Unit: **BWL Child Recreator, Alt Soil/Sed**
Run Mode: Research

*** Air ***

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

| Age | Time Outdoors (hours) | Ventilation Rate ($m^3$/day) | Lung Absorption (%) | Outdoor Air Pb Conc. (µg Pb/$m^3$) |
|---|---|---|---|---|
| 0.5-1 | 1 | 2 | 32 | 0.1 |
| 1-2 | 2 | 3 | 32 | 0.1 |
| 2-3 | 3 | 5 | 32 | 0.1 |
| 3-4 | 4 | 5 | 32 | 0.1 |
| 4-5 | 4 | 5 | 32 | 0.1 |
| 5-6 | 4 | 7 | 32 | 0.1 |
| 6-7 | 4 | 7 | 32 | 0.1 |

*** Diet ***

| Age | Diet Intake (µg/day) |
|---|---|
| 0.5-1 | 2.26 |
| 1-2 | 1.96 |
| 2-3 | 2.13 |
| 3-4 | 2.04 |
| 4-5 | 1.95 |
| 5-6 | 2.05 |
| 6-7 | 2.22 |

*** Drinking Water ***

Drinking Water Concentration: 4.000 µg Pb/L
Water Consumption:

| Age | Water (L/day) |
|---|---|
| 0.5-1 | 0.2 |
| 1-2 | 0.5 |
| 2-3 | 0.52 |
| 3-4 | 0.53 |
| 4-5 | 0.55 |
| 5-6 | 0.58 |
| 6-7 | 0.59 |

*** Soil & Dust ***

| | |
|---|---|
| Multiple Source Analysis Used | |
| Average multiple source concentration: | 274.600 µg/g |
| Mass fraction of outdoor soil to indoor dust conversion factor: | 0.7 |
| Outdoor airborne lead to indoor household dust lead concentration: | 100 |
| Use alternate indoor dust Pb sources? | No |

| Age | Soil (µg Pb/g) | House Dust (µg Pb/g) |
|---|---|---|
| 0.5-1 | 378 | 274.6 |
| 1-2 | 378 | 274.6 |
| 2-3 | 378 | 274.6 |
| 3-4 | 378 | 274.6 |
| 4-5 | 378 | 274.6 |
| 5-6 | 378 | 274.6 |
| 6-7 | 378 | 274.6 |

*** Alternate Intake ***

| Age | Alternate (µg Pb/day) |
|---|---|
| 0.5-1 | 0 |
| 1-2 | 0 |
| 2-3 | 0 |
| 3-4 | 0 |
| 4-5 | 0 |
| 5-6 | 0 |
| 6-7 | 0 |

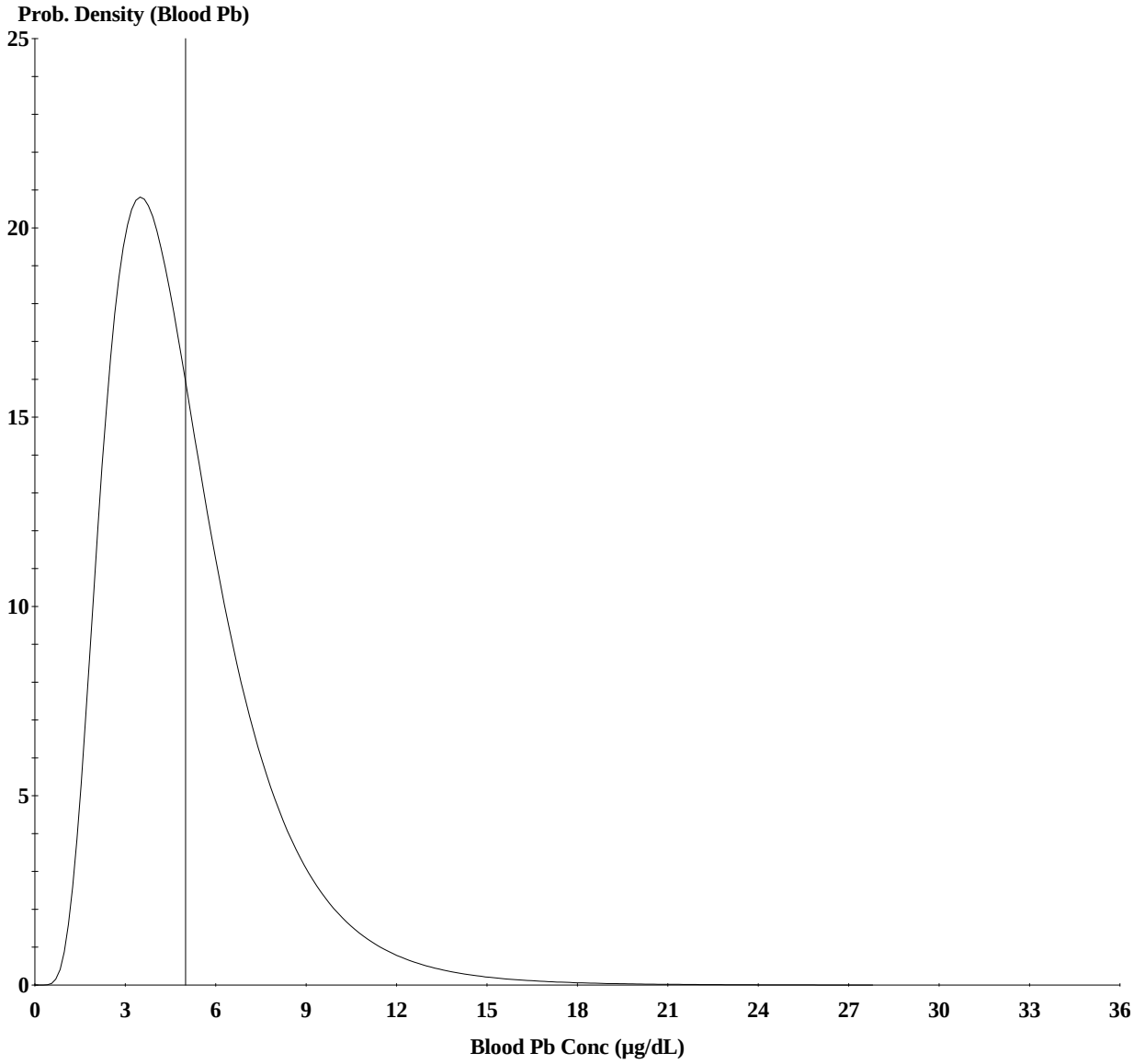
*** Maternal Contribution: Infant Model ***

Maternal Blood Concentration: 0.600 µg Pb/dL

CALCULATED BLOOD LEAD AND LEAD UPTAKES:

| Year | Air (µg/day) | Diet (µg/day) | Alternate (µg/day) | Water (µg/day) |
|---|---|---|---|---|
| 0.5-1 | 0.021 | 1.022 | 0 | 0.36 |
| 1-2 | 0.034 | 0.871 | 0 | 0.89 |
| 2-3 | 0.062 | 0.961 | 0 | 0.94 |
| 3-4 | 0.067 | 0.934 | 0 | 0.97 |
| 4-5 | 0.067 | 0.918 | 0 | 1.04 |
| 5-6 | 0.093 | 0.975 | 0 | 1.10 |
| 6-7 | 0.093 | 1.061 | 0 | 1.13 |

| Year | Soil+Dust (µg/day) | Total (µg/day) | Blood (µg/dL) |
|---|---|---|---|
| 0.5-1 | 7.403 | 8.807 | 4.70 |
| 1-2 | 11.557 | 13.351 | 5.50 |
| 2-3 | 11.739 | 13.701 | 5.10 |
| 3-4 | 11.905 | 13.876 | 4.80 |
| 4-5 | 9.068 | 11.087 | 4.00 |
| 5-6 | 8.246 | 10.417 | 3.30 |
| 6-7 | 7.831 | 10.114 | 2.90 |




**Cutoff = 5.000 µg/dl**
**Geo Mean = 4.547**
**GSD = 1.600**
**% Above = 42.002**
**% Below = 57.998**

**Age Range = User Designated: Ages 12 - 72 months**

**Run Mode = Research**
**Comment = BWL recreator 12-72 months**

**LEAD MODEL FOR WINDOWS** **Version 1.1**

Model Version: 1.1 Build11
User Name:
Date: 7/14/2017
Site Name: Waterbodies
Operable Unit: **HC Child Recreator, Alt Soil/Sed**
Run Mode: Research

*** Air ***

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

| Age | Time Outdoors (hours) | Ventilation Rate ($m^3$/day) | Lung Absorption (%) | Outdoor Air Pb Conc. (µg Pb/$m^3$) |
|---|---|---|---|---|
| 0.5-1 | 1 | 2 | 32 | 0.1 |
| 1-2 | 2 | 3 | 32 | 0.1 |
| 2-3 | 3 | 5 | 32 | 0.1 |
| 3-4 | 4 | 5 | 32 | 0.1 |
| 4-5 | 4 | 5 | 32 | 0.1 |
| 5-6 | 4 | 7 | 32 | 0.1 |
| 6-7 | 4 | 7 | 32 | 0.1 |

*** Diet ***

| Age | Diet Intake (µg/day) |
|---|---|
| 0.5-1 | 2.26 |
| 1-2 | 1.96 |
| 2-3 | 2.13 |
| 3-4 | 2.04 |
| 4-5 | 1.95 |
| 5-6 | 2.05 |
| 6-7 | 2.22 |

*** Drinking Water ***

Drinking Water Concentration: 4.000 µg Pb/L
Water Consumption:

| Age | Water (L/day) |
|---|---|
| 0.5-1 | 0.2 |
| 1-2 | 0.5 |
| 2-3 | 0.52 |
| 3-4 | 0.53 |
| 4-5 | 0.55 |
| 5-6 | 0.58 |
| 6-7 | 0.59 |

*** Soil & Dust ***

Multiple Source Analysis Used

| | |
|---|---|
| Average multiple source concentration: | 2259.100 µg/g |
| Mass fraction of outdoor soil to indoor dust conversion factor: | 0.7 |
| Outdoor airborne lead to indoor household dust lead concentration: | 100 |
| Use alternate indoor dust Pb sources? | No |

| Age | Soil (µg Pb/g) | House Dust (µg Pb/g) |
|---|---|---|
| 0.5-1 | 3213 | 2259.1 |
| 1-2 | 3213 | 2259.1 |
| 2-3 | 3213 | 2259.1 |
| 3-4 | 3213 | 2259.1 |
| 4-5 | 3213 | 2259.1 |
| 5-6 | 3213 | 2259.1 |
| 6-7 | 3213 | 2259.1 |

*** Alternate Intake ***

| Age | Alternate (µg Pb/day) |
|---|---|
| 0.5-1 | 0 |
| 1-2 | 0 |
| 2-3 | 0 |
| 3-4 | 0 |
| 4-5 | 0 |
| 5-6 | 0 |
| 6-7 | 0 |

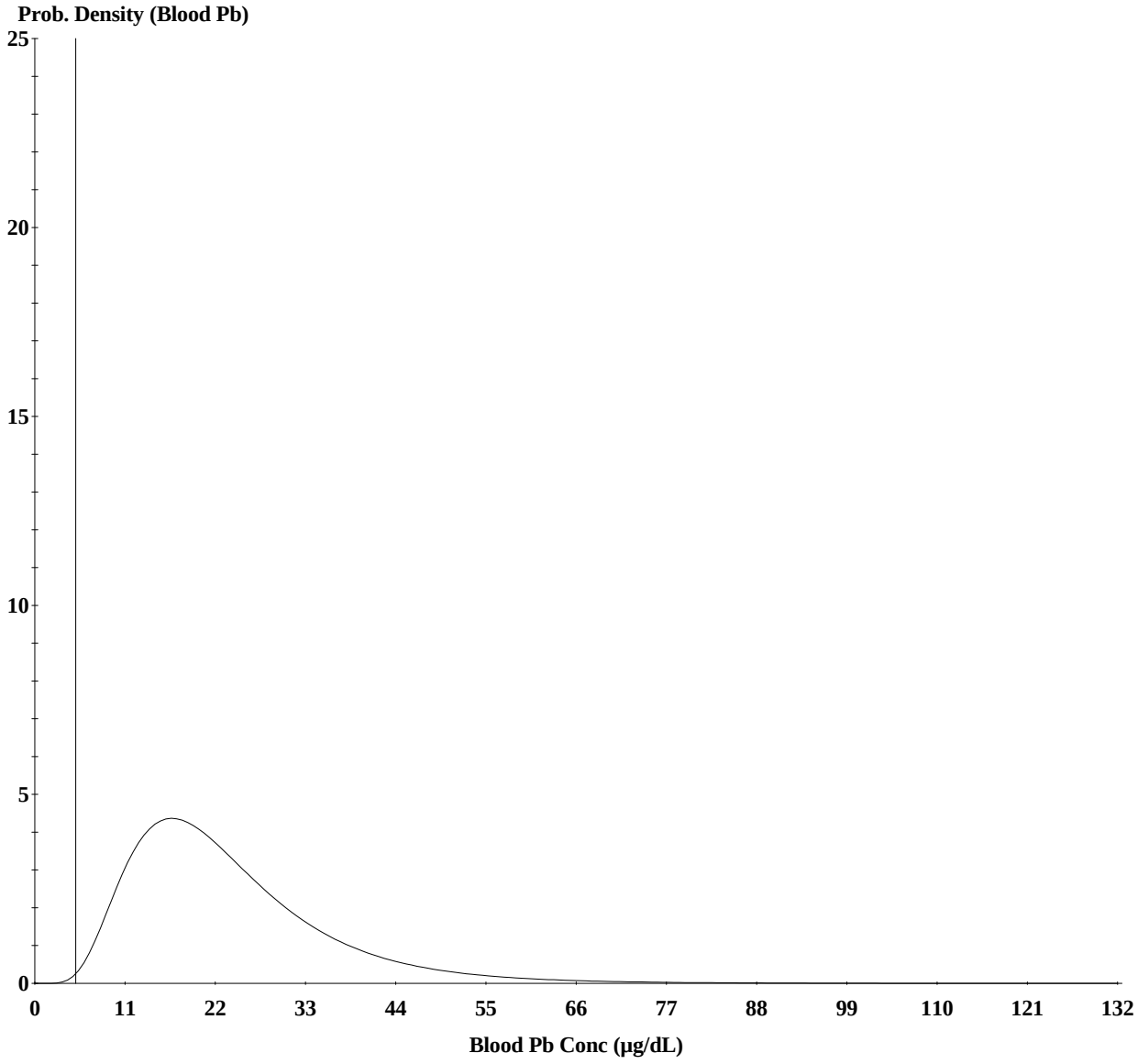
*** Maternal Contribution: Infant Model ***

Maternal Blood Concentration: 0.600 µg Pb/dL

CALCULATED BLOOD LEAD AND LEAD UPTAKES:

| Year | Air (µg/day) | Diet (µg/day) | Alternate (µg/day) | Water (µg/day) |
|---|---|---|---|---|
| 0.5-1 | 0.021 | 0.683 | 0 | 0.242 |
| 1-2 | 0.034 | 0.553 | 0 | 0.564 |
| 2-3 | 0.062 | 0.635 | 0 | 0.620 |
| 3-4 | 0.067 | 0.640 | 0 | 0.666 |
| 4-5 | 0.067 | 0.695 | 0 | 0.784 |
| 5-6 | 0.093 | 0.771 | 0 | 0.872 |
| 6-7 | 0.093 | 0.861 | 0 | 0.915 |

| Year | Soil+Dust (µg/day) | Total (µg/day) | Blood (µg/dL) |
|---|---|---|---|
| 0.5-1 | 41.429 | 42.375 | 21.3 |
| 1-2 | 61.461 | 62.613 | 24.6 |
| 2-3 | 64.950 | 66.268 | 23.4 |
| 3-4 | 68.369 | 69.742 | 23.1 |
| 4-5 | 57.492 | 59.037 | 20.0 |
| 5-6 | 54.585 | 56.321 | 17.3 |
| 6-7 | 53.147 | 55.015 | 15.5 |




**Cutoff = 5.000 µg/dl**
**Geo Mean = 21.680**
**GSD = 1.600**
**% Above = 99.910**
**% Below = 0.090**

**Age Range = User Designated: Ages 12 - 72 months**

**Run Mode = Research**
**Comment = HC recreator 12-72 months**

**LEAD MODEL FOR WINDOWS** **Version 1.1**

Model Version: 1.1 Build11
User Name:
Date: 7/14/2017
Site Name: Waterbodies
Operable Unit: **KWL Child Recreator, Alt Soil/Sed**
Run Mode: Research

*** Air ***

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

| Age | Time Outdoors (hours) | Ventilation Rate ($m^3$/day) | Lung Absorption (%) | Outdoor Air Pb Conc. (µg Pb/$m^3$) |
|---|---|---|---|---|
| 0.5-1 | 1 | 2 | 32 | 0.1 |
| 1-2 | 2 | 3 | 32 | 0.1 |
| 2-3 | 3 | 5 | 32 | 0.1 |
| 3-4 | 4 | 5 | 32 | 0.1 |
| 4-5 | 4 | 5 | 32 | 0.1 |
| 5-6 | 4 | 7 | 32 | 0.1 |
| 6-7 | 4 | 7 | 32 | 0.1 |

*** Diet ***

| Age | Diet Intake (µg/day) |
|---|---|
| 0.5-1 | 2.26 |
| 1-2 | 1.96 |
| 2-3 | 2.13 |
| 3-4 | 2.04 |
| 4-5 | 1.95 |
| 5-6 | 2.05 |
| 6-7 | 2.22 |

*** Drinking Water ***

Drinking Water Concentration: 4.000 µg Pb/L
Water Consumption:

| Age | Water (L/day) |
|---|---|
| 0.5-1 | 0.2 |
| 1-2 | 0.5 |
| 2-3 | 0.52 |
| 3-4 | 0.53 |
| 4-5 | 0.55 |
| 5-6 | 0.58 |
| 6-7 | 0.59 |

*** Soil & Dust ***

Multiple Source Analysis Used

| | |
|---|---|
| Average multiple source concentration: | 241.000 µg/g |
| Mass fraction of outdoor soil to indoor dust conversion factor: | 0.7 |
| Outdoor airborne lead to indoor household dust lead concentration: | 100 |
| Use alternate indoor dust Pb sources? | No |

| Age | Soil (µg Pb/g) | House Dust (µg Pb/g) |
|---|---|---|
| 0.5-1 | 330 | 241 |
| 1-2 | 330 | 241 |
| 2-3 | 330 | 241 |
| 3-4 | 330 | 241 |
| 4-5 | 330 | 241 |
| 5-6 | 330 | 241 |
| 6-7 | 330 | 241 |

*** Alternate Intake ***

| Age | Alternate (µg Pb/day) |
|---|---|
| 0.5-1 | 0 |
| 1-2 | 0 |
| 2-3 | 0 |
| 3-4 | 0 |
| 4-5 | 0 |
| 5-6 | 0 |
| 6-7 | 0 |

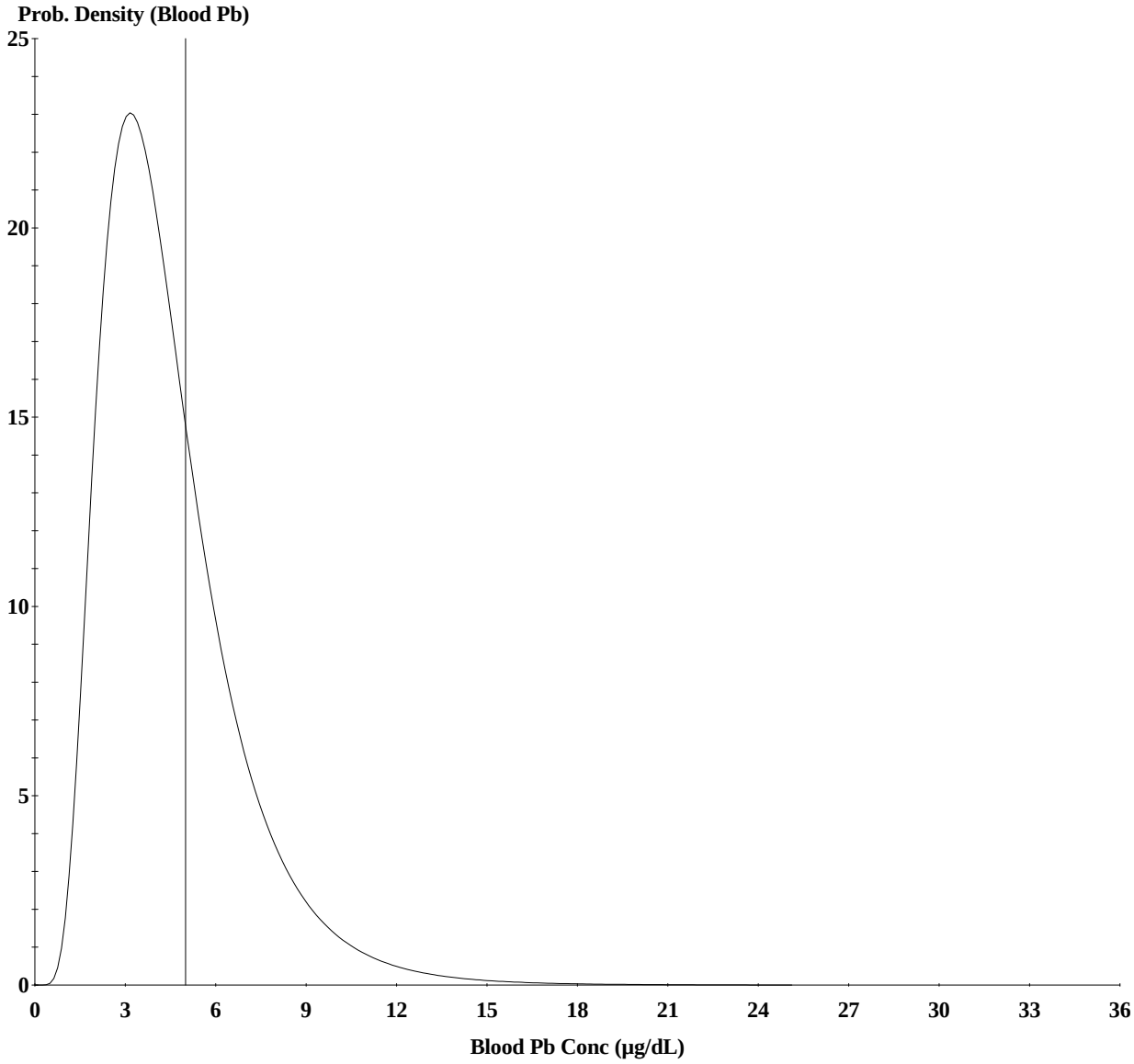
*** Maternal Contribution: Infant Model ***

Maternal Blood Concentration: 0.600 µg Pb/dL

CALCULATED BLOOD LEAD AND LEAD

| Year | Air (µg/day) | Diet (µg/day) | Alternate (µg/day) | Water (µg/day) |
|---|---|---|---|---|
| 0.5-1 | 0.021 | 1.032 | 0 | 0.365 |
| 1-2 | 0.034 | 0.881 | 0 | 0.899 |
| 2-3 | 0.062 | 0.971 | 0 | 0.948 |
| 3-4 | 0.067 | 0.942 | 0 | 0.979 |
| 4-5 | 0.067 | 0.923 | 0 | 1.042 |
| 5-6 | 0.093 | 0.980 | 0 | 1.109 |
| 6-7 | 0.093 | 1.066 | 0 | 1.133 |

| Year | Soil+Dust (µg/day) | Total (µg/day) | Blood (µg/dL) |
|---|---|---|---|
| 0.5-1 | 6.544 | 7.962 | 4.3 |
| 1-2 | 10.235 | 12.05 | 5.0 |
| 2-3 | 10.380 | 12.361 | 4.6 |
| 3-4 | 10.513 | 12.501 | 4.4 |
| 4-5 | 7.983 | 10.015 | 3.6 |
| 5-6 | 7.252 | 9.433 | 3.0 |
| 6-7 | 6.883 | 9.175 | 2.7 |




**Cutoff = 5.000 µg/dl**
**Geo Mean = 4.109**
**GSD = 1.600**
**% Above = 33.806**
**% Below = 66.194**

**Age Range = User Designated: Ages 12 - 72 months**

**Run Mode = Research**
**Comment = KWL recreator 12-72 months**

**LEAD MODEL FOR WINDOWS** **Version 1.1**

| | |
|---|---|
| Model Version: | 1.1 Build11 |
| User Name: | |
| Date: | 8/1/2018 |
| Site Name: | Waterbodies |
| Operable Unit: | **KWL Angler baseline (no fish), Alt Soil/Sed** |
| Run Mode: | Research |

*** Air ***

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

| Age | Time Outdoors (hours) | Ventilation Rate ($m^3$/day) | Lung Absorption (%) | Outdoor Air Pb Conc. (µg Pb/$m^3$) |
|---|---|---|---|---|
| 0.5-1 | 1 | 2 | 32 | 0.1 |
| 1-2 | 2 | 3 | 32 | 0.1 |
| 2-3 | 3 | 5 | 32 | 0.1 |
| 3-4 | 4 | 5 | 32 | 0.1 |
| 4-5 | 4 | 5 | 32 | 0.1 |
| 5-6 | 4 | 7 | 32 | 0.1 |
| 6-7 | 4 | 7 | 32 | 0.1 |

*** Diet ***

| Age | Diet Intake (µg/day) |
|---|---|
| 0.5-1 | 2.26 |
| 1-2 | 1.96 |
| 2-3 | 2.13 |
| 3-4 | 2.04 |
| 4-5 | 1.95 |
| 5-6 | 2.05 |
| 6-7 | 2.22 |

*** Drinking Water ***

Drinking Water Concentration: 4.000 µg Pb/L
Water Consumption:

| Age | Water (L/day) |
|---|---|
| 0.5-1 | 0.2 |
| 1-2 | 0.5 |
| 2-3 | 0.52 |
| 3-4 | 0.53 |
| 4-5 | 0.55 |
| 5-6 | 0.58 |
| 6-7 | 0.59 |

*** Soil & Dust ***

| | |
|---|---|
| Multiple Source Analysis Used | |
| Average multiple source concentration: | 241.000 µg/g |
| Mass fraction of outdoor soil to indoor dust conversion factor: | 0.7 |
| Outdoor airborne lead to indoor household dust lead concentration: | 100 |
| Use alternate indoor dust Pb sources? | No |

| Age | Soil (µg Pb/g) | House Dust (µg Pb/g) |
|---|---|---|
| 0.5-1 | 330 | 241 |
| 1-2 | 330 | 241 |
| 2-3 | 330 | 241 |
| 3-4 | 330 | 241 |
| 4-5 | 330 | 241 |
| 5-6 | 330 | 241 |
| 6-7 | 330 | 241 |

*** Alternate Intake ***

| Age | Alternate (µg Pb/day) |
|---|---|
| 0.5-1 | 0 |
| 1-2 | 0 |
| 2-3 | 0 |
| 3-4 | 0 |
| 4-5 | 0 |
| 5-6 | 0 |
| 6-7 | 0 |

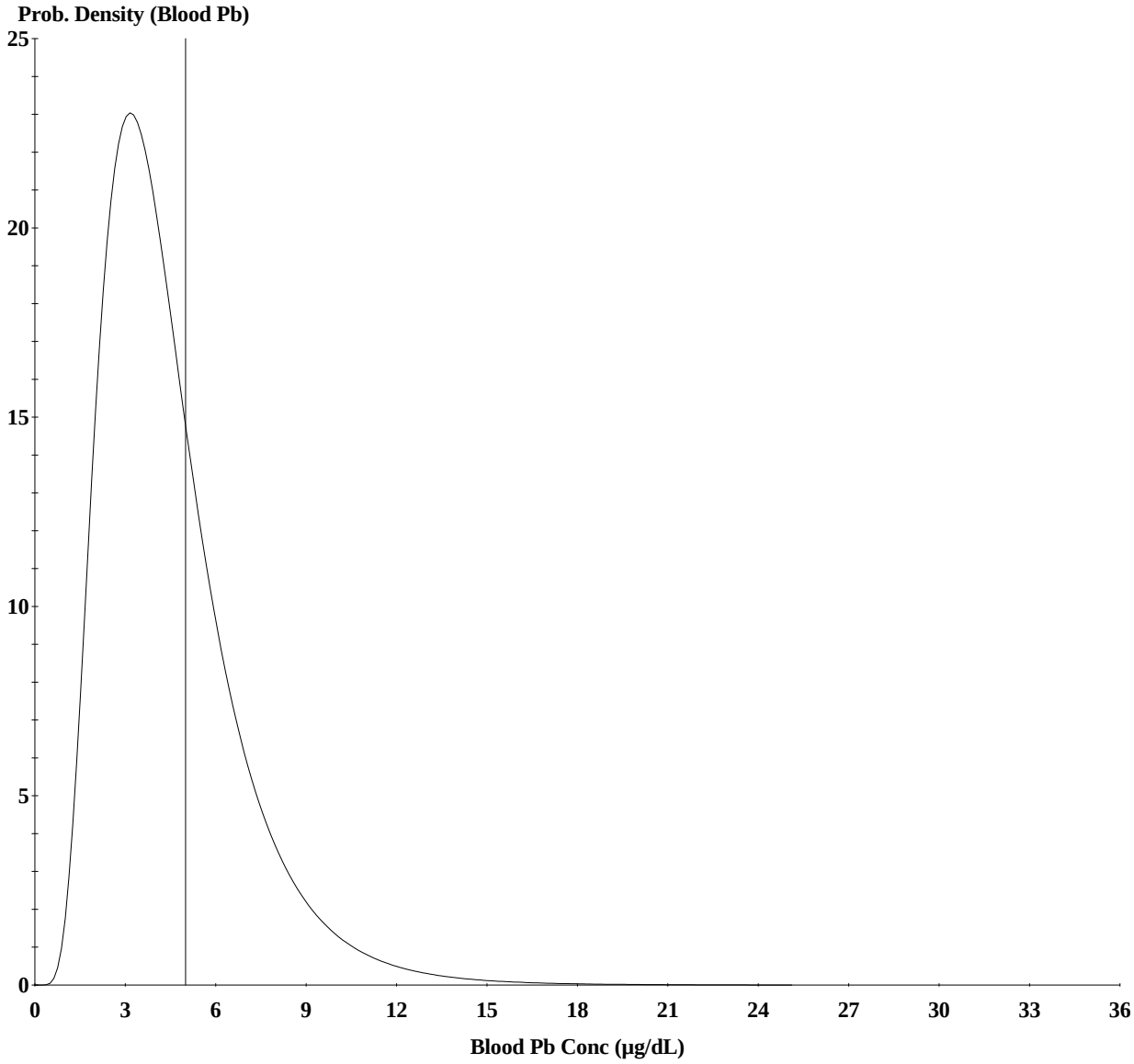
*** Maternal Contribution: Infant Model ***

Maternal Blood Concentration: 0.600 µg Pb/dL

CALCULATED BLOOD LEAD AND LEAD UPTAKES:

| Year | Air (µg/day) | Diet (µg/day) | Alternate (µg/day) | Water (µg/day) |
|---|---|---|---|---|
| 0.5-1 | 0.021 | 1.032 | 0 | 0.365 |
| 1-2 | 0.034 | 0.881 | 0 | 0.899 |
| 2-3 | 0.062 | 0.971 | 0 | 0.948 |
| 3-4 | 0.067 | 0.942 | 0 | 0.979 |
| 4-5 | 0.067 | 0.923 | 0 | 1.042 |
| 5-6 | 0.093 | 0.98 | 0 | 1.109 |
| 6-7 | 0.093 | 1.066 | 0 | 1.133 |

| Year | Soil+Dust (µg/day) | Total (µg/day) | Blood (µg/dL) |
|---|---|---|---|
| 0.5-1 | 6.544 | 7.962 | 4.3 |
| 1-2 | 10.235 | 12.05 | 5.0 |
| 2-3 | 10.380 | 12.361 | 4.6 |
| 3-4 | 10.513 | 12.501 | 4.4 |
| 4-5 | 7.983 | 10.015 | 3.6 |
| 5-6 | 7.252 | 9.433 | 3.0 |
| 6-7 | 6.883 | 9.175 | 2.7 |




**Cutoff = 5.000 µg/dl**
**Geo Mean = 4.109**
**GSD = 1.600**
**% Above = 33.806**
**% Below = 66.194**

**Age Range = User Designated: Ages 12 - 72 months**

**Run Mode = Research**
**Comment = Angler baseline, soil/sed only**

**LEAD MODEL FOR WINDOWS** **Version 1.1**

| | |
|---|---|
| Model Version: | 1.1 Build11 |
| User Name: | |
| Date: | 8/1/2018 |
| Site Name: | Waterbodies |
| Operable Unit: | **KWL Angler (with fish), Alt Soil/Sed** |
| Run Mode: | Research |

*** Air ***

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

| Age | Time Outdoors (hours) | Ventilation Rate ($m^3$/day) | Lung Absorption (%) | Outdoor Air Pb Conc. (µg Pb/$m^3$) |
|---|---|---|---|---|
| 0.5-1 | 1 | 2 | 32 | 0.1 |
| 1-2 | 2 | 3 | 32 | 0.1 |
| 2-3 | 3 | 5 | 32 | 0.1 |
| 3-4 | 4 | 5 | 32 | 0.1 |
| 4-5 | 4 | 5 | 32 | 0.1 |
| 5-6 | 4 | 7 | 32 | 0.1 |
| 6-7 | 4 | 7 | 32 | 0.1 |

*** Diet ***

| Age | Diet Intake (µg/day) |
|---|---|
| 0.5-1 | 2.373 |
| 1-2 | 2.276 |
| 2-3 | 2.536 |
| 3-4 | 2.473 |
| 4-5 | 2.411 |
| 5-6 | 2.546 |
| 6-7 | 2.795 |

Alternative Dietary Values

| | | |
|---|---|---|
| Home grown fruits concentration: | 0.000 µg/g | |
| Home grown vegetables concentration: | 0.000 µg/g | |
| Fish from fishing concentration: | 0.110 µg/g | |
| Game animals from hunting concentration: | 0.000 µg/g | |
| Home grown fruits factor: | 0 | % of all fruits |
| Home grown vegetables factor: | 0 | % of all vegetables |
| Fish from fishing factor: | 10 | %of all meat |
| Game animals from hunting factor: | 0 | % of all meat |

*** Drinking Water ***

| | |
|---|---|
| Drinking Water Concentration: | 4.000 µg Pb/L |
| Water Consumption: | |

| Age | Water (L/day) |
|---|---|
| 0.5-1 | 0.2 |
| 1-2 | 0.5 |
| 2-3 | 0.52 |
| 3-4 | 0.53 |
| 4-5 | 0.55 |
| 5-6 | 0.58 |
| 6-7 | 0.59 |

*** Soil & Dust ***

| | |
|---|---|
| Multiple Source Analysis Used | |
| Average multiple source concentration: | 241.000 µg/g |
| Mass fraction of outdoor soil to indoor dust conversion factor: | 0.7 |
| Outdoor airborne lead to indoor household dust lead concentration: | 100 |
| Use alternate indoor dust Pb sources? | No |

| Age | Soil (µg Pb/g) | House Dust (µg Pb/g) |
|---|---|---|
| 0.5-1 | 330 | 241 |
| 1-2 | 330 | 241 |
| 2-3 | 330 | 241 |
| 3-4 | 330 | 241 |
| 4-5 | 330 | 241 |
| 5-6 | 330 | 241 |
| 6-7 | 330 | 241 |

*** Alternate Intake ***

| Age | Alternate (µg Pb/day) |
|---|---|
| 0.5-1 | 0 |
| 1-2 | 0 |
| 2-3 | 0 |
| 3-4 | 0 |
| 4-5 | 0 |
| 5-6 | 0 |
| 6-7 | 0 |

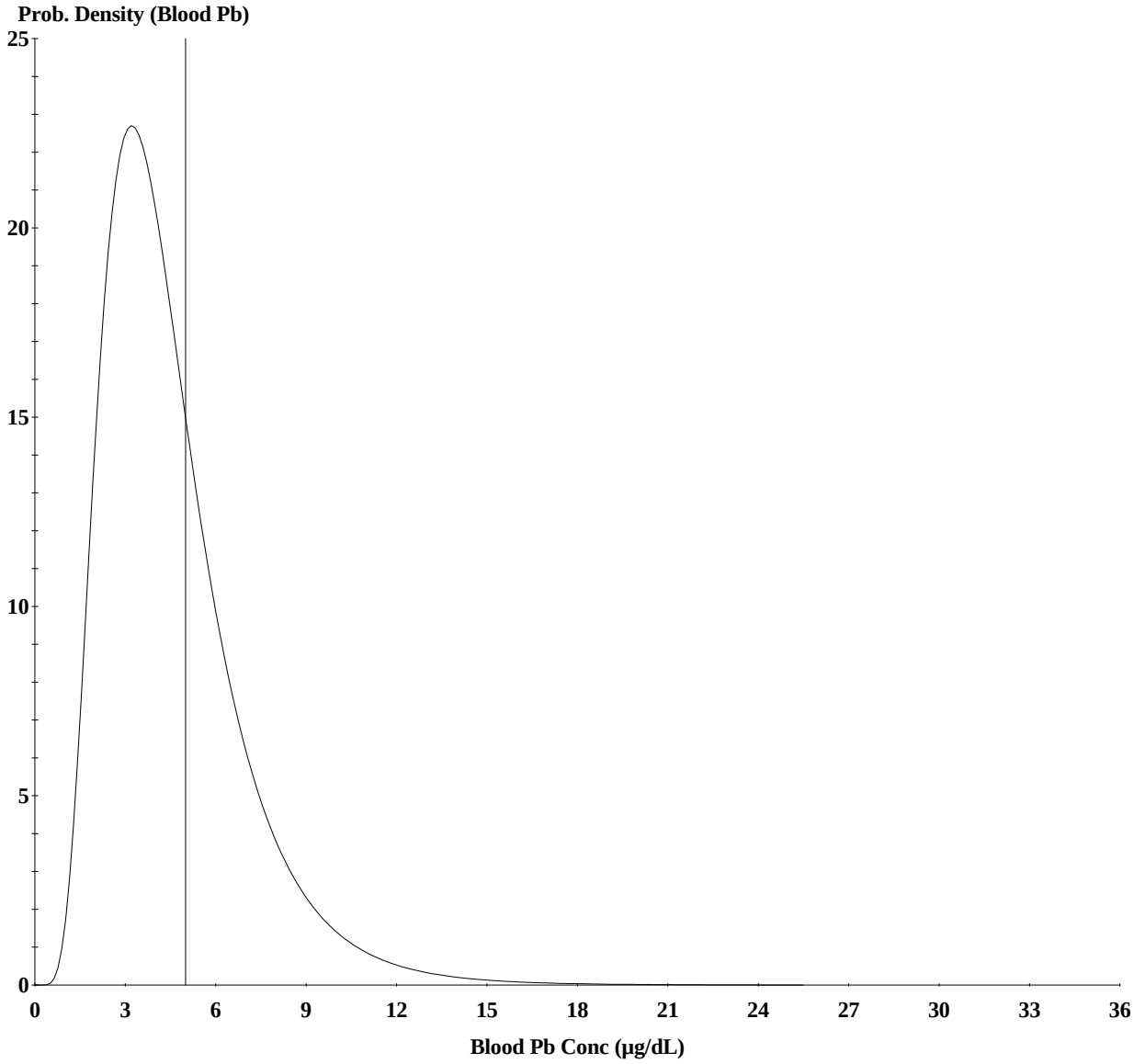
*** Maternal Contribution: Infant Model ***

Maternal Blood Concentration: 0.600 µg Pb/dL

CALCULATED BLOOD LEAD AND LEAD

| Year | Air (µg/day) | Diet (µg/day) | Alternate (µg/day) | Water (µg/day) |
|---|---|---|---|---|
| 0.5-1 | 0.021 | 1.083 | 0 | 0.365 |
| 1-2 | 0.034 | 1.022 | 0.0 | 0.898 |
| 2-3 | 0.062 | 1.155 | 0.0 | 0.947 |
| 3-4 | 0.067 | 1.140 | 0.0 | 0.978 |
| 4-5 | 0.067 | 1.140 | 0.0 | 1.040 |
| 5-6 | 0.093 | 1.215 | 0.0 | 1.107 |
| 6-7 | 0.093 | 1.341 | 0.0 | 1.132 |

| Year | Soil+Dust (µg/day) | Total (µg/day) | Blood (µg/dL) |
|---|---|---|---|
| 0.5-1 | 6.540 | 8.009 | 4.3 |
| 1-2 | 10.223 | 12.178 | 5.0 |
| 2-3 | 10.366 | 12.530 | 4.7 |
| 3-4 | 10.500 | 12.685 | 4.4 |
| 4-5 | 7.974 | 10.221 | 3.7 |
| 5-6 | 7.243 | 9.659 | 3.1 |
| 6-7 | 6.874 | 9.440 | 2.7 |




**Cutoff = 5.000 µg/dl**
**Geo Mean = 4.169**
**GSD = 1.600**
**% Above = 34.953**
**% Below = 65.047**

**Age Range = User Designated: Ages 12 - 72 months**

**Run Mode = Research**
**Comment = KWL Angler, soil/sed and fish**

# Appendix G

## Fish Sampling Summary

**Table G.1 Fish Sample Summary**

| Guild | # | Fish Sample ID | Species | Number | Zone | Process Time | Length (cm) | Weight (g) | Fillet Weight (g) | Post-homogenization Fillet Weight (g) | Skin Removed[1] | QC Sample |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benthic Omnivore | 1 | KWBB0001-TI-AA-R1-0 | Brown bullhead (BB) | 1 | B | 1530 | 24.2 | 206.0 | 36.01 | 31.26 | Yes | |
| | 2 | KWBB0002-TI-AA-R1-0 | Brown bullhead (BB) | 2 | B | 1540 | 29.8 | 305.3 | 33.22 | 29.03 | Yes | |
| | 3 | KWBB0003-TI-AA-R1-0 | Brown bullhead (BB) | 3 | C | 1550 | 28.3 | 246.6 | 46.75 | 44.18 | Yes | |
| | 4 | KWBB0004-TI-AA-R1-0 | Brown bullhead (BB) | 4 | C | 1600 | 26.0 | 214.8 | 58.85 | 53.24 | Yes | |
| | 5 | KWBB0005-TI-AA-R1-0 | Brown bullhead (BB) | 5 | C | 1608 | 29.8 | 314.5 | 37.80 | 35.06 | Yes | |
| | 6 | KWBB0006-TI-AA-R1-0 | Brown bullhead (BB) | 6 | C | 1615 | 31.0 | 320.6 | 42.26 | 37.70 | Yes | |
| | 7 | KWBB0007-TI-AA-R1-0 | Brown bullhead (BB) | 7 | C | 1623 | 26.2 | 185.9 | 34.30 | 31.66 | Yes | |
| | 8 | KWBB0008-TI-AA-R1-0 | Brown bullhead (BB) | 8 | C | 1632 | 30.0 | 278.3 | 44.68 | 40.85 | Yes | |
| | 9 | KWBB0009-TI-AA-R1-0 | Brown bullhead (BB) | 9 | C | 1638 | 32.1 | 370.4 | 46.55 | 45.95 | Yes | |
| | 10 | KWBB0010-TI-AA-R1-0 | Brown bullhead (BB) | 10 | C | 1646 | 31.4 | 317.4 | 32.55 | 29.34 | Yes | |
| | 11 | KWBB0011-TI-AA-R1-0 | Brown bullhead (BB) | 11 | D | 1656 | 24.4 | 167.5 | 41.17 | 39.96 | Yes | |
| | 12 | KWBB0012-TI-AA-R1-0 | Brown bullhead (BB) | 12 | D | 1705 | 29.2 | 299.8 | 51.20 | 50.44 | Yes | |
| | 13 | KWBB0013-TI-AA-R1-0 | Brown bullhead (BB) | 13 | D | 1714 | 27.5 | 266.0 | 47.20 | 42.30 | Yes | |
| | 14 | KWBB0014-TI-AA-R1-0 | Brown bullhead (BB) | 14 | D | 1725 | 30.0 | 297.3 | 44.42 | 42.82 | Yes | |
| | 15 | KWBB0015-TI-AA-R1-0 | Brown bullhead (BB) | 15 | D | 1741 | 25.5 | 201.7 | 41.86 | 36.19 | Yes | |
| | 16 | KWBB0016-TI-AA-R1-0 | Brown bullhead (BB) | 16 | D | 1744 | 27.2 | 274.7 | 36.88 | 36.33 | Yes | |
| | 17 | KWBB0017-TI-AA-R1-0 | Brown bullhead (BB) | 17 | D | 1753 | 26.5 | 222.9 | 51.96 | 51.06 | Yes | |
| | 18 | KWBB0018-TI-AA-R1-0 | Brown bullhead (BB) | 18 | D | 1758 | 29.0 | 264.5 | 35.21 | 34.45 | Yes | |
| | 19 | KWBB0019-TI-AA-R1-0 | Brown bullhead (BB) | 19 | D | 1807 | 31.2 | 412.9 | 52.80 | 53.15 | Yes | |
| | 20 | KWBB0020-TI-AA-R1-0 | Brown bullhead (BB) | 20 | D | 1813 | 28.5 | 323.7 | 45.93 | 45.25 | Yes | |
| | 21 | KWBB0021-TI-AA-R1-0 | Brown bullhead (BB) | 21 | D | 1822 | 30.1 | 321.4 | 42.74 | 41.43 | Yes | |
| | 1 | KWCC0001-TI-AA-R1-0 | Common carp (CC) | 1 | A | 1006 | 50.0 | 1384.3 | 98.57 | 50.71 | X | |
| | 2 | KWCC0002-TI-AA-R1-0 | Common carp (CC) | 2 | A | 1012 | 54.8 | 2128.3 | 309.70 | 281.23 | | MS/MSD |
| | 3 | KWCC0003-TI-AA-R1-0 | Common carp (CC) | 3 | B | 1020 | 59.2 | 2768.3 | 480.44 | 354.20 | X | |
| | 4 | KWCC0004-TI-AA-R1-0 | Common carp (CC) | 4 | B | 1031 | 56.0 | 2748.9 | 458.89 | 412.07 | X | |
| | 5 | KWCC0005-TI-AA-R1-0 | Common carp (CC) | 5 | C | 1039 | 52.5 | 1928.2 | 346.25 | 340.33 | X | |
| | 6 | KWCC0006-TI-AA-R1-0 | Common carp (CC) | 6 | C | 1044 | 49.6 | 1776.3 | 339.39 | 336.63 | X | |
| | 7 | KWCC0007-TI-AA-R1-0 | Common carp (CC) | 7 | D | 1052 | 43.0 | 1237.2 | 219.21 | 216.06 | X | |
| | 8 | KWCC0008-TI-AA-R1-0 | Common carp (CC) | 8 | D | 1056 | 48.2 | 1625.3 | 268.36 | 243.17 | X | |
| | 8 | KWCC0008-TI-AA-R1-1 | Common carp (CC) | 8 | D | 1100 | 48.2 | 1625.3 | 262.65 | 257.35 | | Duplicate |
| Sport Fish | 1 | KWLB0001-TI-AA-R1-0 | Largemouth bass (LB) | 1 | A | 0834 | 31.1 | 493.6 | 108.92 | 98.86 | X | MS/MSD |
| | 2 | KWLB0002-TI-AA-R1-0 | Largemouth bass (LB) | 2 | B | 0847 | 30.9 | 420.3 | 87.76 | 83.88 | | |
| | 3 | KWLB0003-TI-AA-R1-0 | Largemouth bass (LB) | 3 | C | 0855 | 42.2 | 1035.9 | 192.32 | 117.29 | X | |
| | 3 | KWLB0003-TI-AA-R1-1 | Largemouth bass (LB) | 3 | C | 0900 | 42.2 | 1035.9 | 195.94 | 188.05 | X | Duplicate |
| | 4 | KWLB0004-TI-AA-R1-0 | Largemouth bass (LB) | 4 | C | 0916 | 30.8 | 428.5 | 82.70 | 55.44 | X | |
| | 5 | KWLB0005-TI-AA-R1-0 | Largemouth bass (LB) | 5 | D | 0922 | 32.8 | 433.9 | 87.62 | 61.13 | X | |
| | 1 | KWBC0001-TI-AA-R1-0 | Black crappie (BC) | 1 | A | 0913 | 22.0 | 153.1 | 40.85 | 37.32 | | |
| | 2 | KWBC0002-TI-AA-R1-0 | Black crappie (BC) | 2 | A | 0925 | 23.0 | 180.7 | 46.38 | 37.76 | X | |
| | 3 | KWBC0003-TI-AA-R1-0 | Black crappie (BC) | 3 | B | 0930 | 20.7 | 121.5 | 45.62 | 41.01 | X | |
| | 4 | KWBC0004-TI-AA-R1-0 | Black crappie (BC) | 4 | B | 0935 | 21.0 | 124.7 | 36.11 | 31.86 | X | |
| | 5 | KWBC0005-TI-AA-R1-0 | Black crappie (BC) | 5 | D | 0941 | 20.2 | 112.6 | 43.80 | 40.25 | X | |
| | 6 | KWBC0006-TI-AA-R1-0 | Black crappie (BC) | 6 | D | 1000 | 20.5 | 120.5 | 43.38 | 38.81 | X | |

Notes:
MS – Matrix Spike; MSD – Matrix Spike Duplicate; QC – Quality Control Sample.
Yellow shading: Below the required gram weight for percent moisture analysis. Not analyzed.
X – Fish from which the skin was removed and disposed of during homogenization.
(1) Brown bullhead fillet samples were submitted without skin, while largemouth bass and black crappie fillet samples were submitted as skin-on fillets per the approved work plan.

**Table G.2 Alternative Fish Samples**

| # | Species | Sample Number | Zone | Length (cm) | Weight (g) | Composite Sample |
|---|---|---|---|---|---|---|
| 2 | Sunfish *(Lepomis sp.)* | 2 | A | 16.0 | 74.1 | Composite A |
| 3 | Sunfish *(Lepomis sp.)* | 3 | B | 17.0 | 75.0 | Composite A |
| 4 | Sunfish *(Lepomis sp.)* | 4 | B | 17.4 | 97.6 | |
| 5 | Sunfish *(Lepomis sp.)* | 5 | C | 16.3 | 63.0 | Composite B |
| 6 | Sunfish *(Lepomis sp.)* | 6 | C | 17.0 | 94.3 | |
| 7 | Sunfish *(Lepomis sp.)* | 7 | D | 16.8 | 65.9 | Composite B |
| 8 | Sunfish *(Lepomis sp.)* | 8 | D | 17.5 | 105.8 | |
| 1 | Black crappie (BC) | 1 | B | 18.0 | 86.2 | |
| 2 | Black crappie (BC) | 2 | C | 17.5 | 72.6 | |

**Table G.3 KWL Fish Tissue Sample Summary**

| Guild | # | Fish Sample ID | Species | Zone | Age | Length (cm) | Weight (g) | Post-homogenization Fillet Weight (g) | Skin Retained[1] | Composite ID | QC Sample |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benthic Omnivore | 1 | KWBB0001-TI-AA-R1-0 | Brown bullhead (BB) | B | 4 | 24.2 | 206.0 | 31.26 | | | |
| | 3 | KWBB0003-TI-AA-R1-0 | Brown bullhead (BB) | C | 4 | 28.3 | 246.6 | 44.18 | | | |
| | 4 | KWBB0004-TI-AA-R1-0 | Brown bullhead (BB) | C | 4 | 26.0 | 214.8 | 53.24 | | | |
| | 5 | KWBB0005-TI-AA-R1-0 | Brown bullhead (BB) | C | 5 | 29.8 | 314.5 | 35.06 | | | |
| | 6 | KWBB0006-TI-AA-R1-0 | Brown bullhead (BB) | C | 4 | 31.0 | 320.6 | 37.70 | | | |
| | 7 | KWBB0007-TI-AA-R1-0 | Brown bullhead (BB) | C | 4 | 26.2 | 185.9 | 31.66 | | | |
| | 8 | KWBB0008-TI-AA-R1-0 | Brown bullhead (BB) | C | 4 | 30.0 | 278.3 | 40.85 | | | |
| | 9 | KWBB0009-TI-AA-R1-0 | Brown bullhead (BB) | C | 4 | 32.1 | 370.4 | 45.95 | | | |
| | 11 | KWBB0011-TI-AA-R1-0 | Brown bullhead (BB) | D | 3 | 24.4 | 167.5 | 39.96 | | | |
| | 12 | KWBB0012-TI-AA-R1-0 | Brown bullhead (BB) | D | 4 | 29.2 | 299.8 | 50.44 | | | |
| | 13 | KWBB0013-TI-AA-R1-0 | Brown bullhead (BB) | D | 4 | 27.5 | 266.0 | 42.30 | | | |
| | 14 | KWBB0014-TI-AA-R1-0 | Brown bullhead (BB) | D | 5 | 30.0 | 297.3 | 42.82 | | | |
| | 15 | KWBB0015-TI-AA-R1-0 | Brown bullhead (BB) | D | 4 | 25.5 | 201.7 | 36.19 | | | |
| | 16 | KWBB0016-TI-AA-R1-0 | Brown bullhead (BB) | D | 4 | 27.2 | 274.7 | 36.33 | | | |
| | 17 | KWBB0017-TI-AA-R1-0 | Brown bullhead (BB) | D | 4 | 26.5 | 222.9 | 51.06 | | | |
| | 18 | KWBB0018-TI-AA-R1-0 | Brown bullhead (BB) | D | 5 | 29.0 | 264.5 | 34.45 | | | |
| | 19 | KWBB0019-TI-AA-R1-0 | Brown bullhead (BB) | D | 5 | 31.2 | 412.9 | 53.15 | | | |
| | 20 | KWBB0020-TI-AA-R1-0 | Brown bullhead (BB) | D | 4 | 28.5 | 323.7 | 45.25 | | | |
| | 21 | KWBB0021-TI-AA-R1-0 | Brown bullhead (BB) | D | 4 | 30.1 | 321.4 | 41.43 | | | |
| | 1 | KWCC0001-TI-AA-R1-0 | Common carp (CC) | A | 10 | 50.0 | 1384.3 | 50.71 | | | |
| | 2 | KWCC0002-TI-AA-R1-0 | Common carp (CC) | A | 9+ | 54.8 | 2128.3 | 281.23 | X | | MS/MSD |
| | 2 | KWCC0002-TI-AA-R1-1 | Common carp (CC) | A | 9+ | 54.8 | 2128.3 | 281.23 | X | | Duplicate |
| | 3 | KWCC0003-TI-AA-R1-0 | Common carp (CC) | B | 12 | 59.2 | 2768.3 | 354.20 | | | |
| | 4 | KWCC0004-TI-AA-R1-0 | Common carp (CC) | B | 12 | 56.0 | 2748.9 | 412.07 | | | |
| | 5 | KWCC0005-TI-AA-R1-0 | Common carp (CC) | C | 8 | 52.5 | 1928.2 | 340.33 | | | |
| | 6 | KWCC0006-TI-AA-R1-0 | Common carp (CC) | C | 8 | 49.6 | 1776.3 | 336.63 | | | |
| | 7 | KWCC0007-TI-AA-R1-0 | Common carp (CC) | D | 6 | 43.0 | 1237.2 | 216.06 | | | |
| | 8 | KWCC0008-TI-AA-R1-0 | Common carp (CC) | D | 10 | 48.2 | 1625.3 | 243.17 | | | |
| | 8 | KWCC0008-TI-AA-R1-1 | Common carp (CC) | D | 10 | 48.2 | 1625.3 | 257.35 | X | | Duplicate |
| | | | | | | | | | | | |
| Sport Fish | 1 | KWLB0001-TI-AA-R1-0 | Largemouth bass (LB) | A | 4 | 31.1 | 493.6 | 98.86 | | | MS/MSD |
| | 1 | KWLB0002-TI-AA-R1-0 | Largemouth bass (LB) | B | 4 | 30.9 | 420.3 | 83.88 | X | | |
| | 2 | KWLB0002-TI-AA-R1-1 | Largemouth bass (LB) | B | 4 | 30.9 | 420.3 | 83.88 | X | | Duplicate |
| | 3 | KWLB0003-TI-AA-R1-0 | Largemouth bass (LB) | C | 6 | 42.2 | 1035.9 | 117.29 | | | |
| | 3 | KWLB0003-TI-AA-R1-1 | Largemouth bass (LB) | C | 6 | 42.2 | 1035.9 | 117.29 | | | Duplicate |
| | 5 | KWLB0004-TI-AA-R1-0 | Largemouth bass (LB) | C | 4 | 30.8 | 428.5 | 55.44 | | | |
| | 6 | KWLB0005-TI-AA-R1-0 | Largemouth bass (LB) | D | 4 | 32.8 | 433.9 | 61.13 | | | |
| | 1 | KWBC0001-TI-AA-R1-0 | Black crappie (BC) | A | 4 | 22.0 | 153.1 | 37.32 | X | | |
| | 2 | KWBC0002-TI-AA-R1-0 | Black crappie (BC) | A | 4 | 23.0 | 180.7 | 37.76 | | | |
| | 3 | KWBC0003-TI-AA-R1-0 | Black crappie (BC) | B | 4 | 20.7 | 121.5 | 41.01 | | | |
| | 4 | KWBC0004-TI-AA-R1-0 | Black crappie (BC) | B | 5 | 21.0 | 124.7 | 31.86 | | | |
| | 5 | KWBC0005-TI-AA-R1-0 | Black crappie (BC) | D | 3 | 20.2 | 112.6 | 40.25 | | | |
| | 6 | KWBC0006-TI-AA-R1-0 | Black crappie (BC) | D | 3 | 20.5 | 120.5 | 38.81 | | | |
| | 7 | KWBC0007-TI-AA-R1-0 | Black crappie (BC) | B | 2 | 18.0 | 86.2 | 32.62 | X | | |
| | 8 | KWBC0008-TI-AA-R1-0 | Black crappie (BC) | C | 2 | 17.5 | 72.6 | 32.07 | X | | |
| | 3 | KWSF0003-TI-AA-R1-0 | Sunfish *(Lepomis sp.)* | A | 5 | 16.0 | 74.1 | 19.24 | X | KWSF0010-TI-AA-R1-0 | |
| | 4 | KWSF0004-TI-AA-R1-0 | Sunfish *(Lepomis sp.)* | B | 5 | 17.0 | 75.0 | 20.35 | X | | |
| | 5 | KWSF0005-TI-AA-R1-0 | Sunfish *(Lepomis sp.)* | B | 5 | 17.4 | 97.6 | 38.40 | X | | |
| | 6 | KWSF0006-TI-AA-R1-0 | Sunfish *(Lepomis sp.)* | C | 4 | 16.3 | 63.0 | 20.89 | X | KWSF0011-TI-AA-R1-0 | |
| | 8 | KWSF0008-TI-AA-R1-0 | Sunfish *(Lepomis sp.)* | D | 5 | 16.8 | 65.9 | 22.46 | X | | |
| | 7 | KWSF0007-TI-AA-R1-0 | Sunfish *(Lepomis sp.)* | C | 5 | 17.0 | 94.3 | 35.28 | X | | |
| | 9 | KWSF0009-TI-AA-R1-0 | Sunfish *(Lepomis sp.)* | D | 6 | 17.5 | 105.8 | 33.38 | X | | |

Notes:

MS – Matrix Spike; MSD – Matrix Spike Duplicate; QC – Quality Control Sample.

X – Fish from which the skin was retained per the work plan.

Blank cell indicates it is not a QC sample.

(1) Brown bullhead fillet samples were submitted without skin, while largemouth bass and black crappie fillet samples were submitted as skin-on fillets per the approved work plan.

**Table G.4 Fish Summary for COPCs, by Species**

| Species/Guild | Group | Chemical | Detection Frequency | Minimum Detected (mg/kg) | Maximum Detected (mg/kg) | Mean (mg/kg) | UCLM (mg/kg) | EPC (mg/kg) | Statistic/Rationale | No. Skin On | No. Skin Off |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Brown Bullhead (BB) | Metals | ARSENIC | 11/19 | 0.051 | 0.23 | 0.095 | 0.12 | 0.12 | 95% KM (t) UCL | 0 | 19 |
| | Metals | CHROMIUM | 18/19 | 0.094 | 15 | 2.4 | 5.0 | 5.0 | Gamma Adjusted KM-UCL (use when k<=1 and 15 < n < 50 but k<=1) | | |
| | Metals | LEAD | 7/19 | 0.033 | 0.72 | 0.086 | 0.25 | 0.086 | Arithmetic mean | | |
| | PEST/PCB | AROCLOR-1254 | 19/19 | 0.0040 | 0.054 | 0.017 | 0.023 | 0.023 | 95% Adjusted Gamma UCL | | |
| | PEST/PCB | AROCLOR-1260 | 19/19 | 0.0054 | 0.043 | 0.017 | 0.021 | 0.021 | 95% KM Adjusted Gamma UCL | | |
| | PEST/PCB | 4,4'-DDD | 17/19 | 0.00046 | 0.0089 | 0.0029 | 0.0046 | 0.0046 | 95% Student's-t UCL | | |
| | PEST/PCB | 4,4'-DDE | 19/19 | 0.0010 | 0.016 | 0.0066 | 0.0093 | 0.0093 | 95% Student's-t UCL | | |
| Common Carp (CC) | Metals | ARSENIC | 9/9 | 0.055 | 0.19 | 0.12 | 0.14 | 0.14 | 95% Student's-t UCL | 2 | 7 |
| | Metals | CHROMIUM | 9/9 | 0.13 | 6.7 | 1.2 | 4.3 | 4.3 | 95% Chebyshev (Mean, Sd) UCL | | |
| | Metals | LEAD | 9/9 | 0.044 | 1.0 | 0.21 | 0.50 | 0.21 | Arithmetic mean | | |
| | PEST/PCB | AROCLOR-1254 | 9/9 | 0.0050 | 0.16 | 0.090 | 0.12 | 0.12 | 95% Student's-t UCL | | |
| | PEST/PCB | AROCLOR-1260 | 8/9 | 0.020 | 0.066 | 0.040 | 0.054 | 0.054 | 95% Student's-t UCL | | |
| | PEST/PCB | 4,4'-DDD | 9/9 | 0.0017 | 0.042 | 0.020 | 0.030 | 0.030 | 95% Student's-t UCL | | |
| | PEST/PCB | 4,4'-DDE | 9/9 | 0.0016 | 0.063 | 0.032 | 0.046 | 0.046 | 95% KM (t) UCL | | |
| Black Crappie (BC) | Metals | ARSENIC | 4/8 | 0.065 | 0.094 | 0.068 | 0.081 | 0.081 | 95% KM (t) UCL | 3 | 5 |
| | Metals | CHROMIUM | 7/8 | 0.11 | 3.4 | 1.7 | 2.6 | 2.6 | 95% KM (t) UCL | | |
| | Metals | LEAD | 3/8 | 0.054 | 0.094 | 0.048 | 0.073 | 0.048 | Arithmetic mean | | |
| | PEST/PCB | AROCLOR-1254 | 8/8 | 0.0029 | 0.012 | 0.0073 | 0.0090 | 0.0090 | 95% Student's-t UCL | | |
| | PEST/PCB | AROCLOR-1260 | 7/8 | 0.0024 | 0.0095 | 0.0037 | 0.0071 | 0.0071 | 95% Student's-t UCL | | |
| | PEST/PCB | 4,4'-DDD | 8/8 | 0.00022 | 0.0013 | 0.00076 | 0.0011 | 0.0011 | 95% Student's-t UCL | | |
| | PEST/PCB | 4,4'-DDE | 8/8 | 0.00061 | 0.0035 | 0.0018 | 0.0025 | 0.0025 | 95% KM Adjusted Gamma UCL | | |
| Largemouth Bass (LB) | Metals | ARSENIC | 2/5 | 0.057 | 0.058 | 0.080 | 0.059 | 0.058 | Maximum detected | 1 | 4 |
| | Metals | CHROMIUM | 5/5 | 0.52 | 14 | 5.7 | 11 | 11 | 95% Student's-t UCL | | |
| | Metals | LEAD | 1/5 | 0.045 | 0.045 | 0.046 | NA | 0.046 | Arithmetic mean | | |
| | PEST/PCB | AROCLOR-1254 | 5/5 | 0.0053 | 0.027 | 0.012 | 0.021 | 0.021 | 95% Adjusted Gamma UCL | | |
| | PEST/PCB | AROCLOR-1260 | 5/5 | 0.0044 | 0.012 | 0.0071 | 0.010 | 0.010 | 95% Adjusted Gamma UCL | | |
| | PEST/PCB | 4,4'-DDD | 5/5 | 0.00046 | 0.0045 | 0.0015 | 0.0084 | 0.0045 | Maximum detected | | |
| | PEST/PCB | 4,4'-DDE | 5/5 | 0.0015 | 0.0078 | 0.0034 | 0.011 | 0.0078 | Maximum detected | | |
| Sunfish (*Lepomis sp* .) | Metals | ARSENIC | 4/5 | 0.051 | 0.11 | 0.069 | 0.10 | 0.10 | 95% KM (t) UCL | 5 | 0 |
| | Metals | CHROMIUM | 4/5 | 0.28 | 0.46 | 0.29 | 0.43 | 0.43 | 95% KM (t) UCL | | |
| | Metals | LEAD | 4/5 | 0.040 | 0.58 | 0.17 | 0.40 | 0.17 | Arithmetic mean | | |
| | PEST/PCB | AROCLOR-1254 | 5/5 | 0.0031 | 0.016 | 0.0092 | 0.014 | 0.014 | 95% Student's-t UCL | | |
| | PEST/PCB | AROCLOR-1260 | 5/5 | 0.0023 | 0.014 | 0.0080 | 0.013 | 0.013 | 95% KM (t) UCL | | |
| | PEST/PCB | 4,4'-DDD | 4/5 | 0.00086 | 0.0014 | 0.00084 | 0.0013 | 0.0013 | 95% Student's-t UCL | | |
| | PEST/PCB | 4,4'-DDE | 5/5 | 0.0013 | 0.0053 | 0.0035 | 0.0049 | 0.0049 | 95% Student's-t UCL | | |

**Table G.4 Fish Summary for COPCs, by Species**

| Species/Guild | Group | Chemical | Detection Frequency | Minimum Detected (mg/kg) | Maximum Detected (mg/kg) | Mean (mg/kg) | UCLM (mg/kg) | EPC (mg/kg) | Statistic/Rationale | No. Skin On | No. Skin Off |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benthic Omnivore | Metals | ARSENIC | 20/28 | 0.051 | 0.23 | 0.10 | 0.12 | 0.12 | 95% KM (t) UCL | 2 | 26 |
| | Metals | CHROMIUM | 27/28 | 0.094 | 15 | 2.0 | 4.6 | 4.6 | 95% KM (Chebyshev) UCL | | |
| | Metals | LEAD | 16/28 | 0.033 | 1.0 | 0.13 | 0.15 | 0.13 | Arithmetic mean | | |
| | PEST/PCB | AROCLOR-1254 | 28/28 | 0.0040 | 0.16 | 0.041 | 0.060 | 0.060 | 95% Adjusted Gamma UCL | | |
| | PEST/PCB | AROCLOR-1260 | 27/28 | 0.0054 | 0.066 | 0.024 | 0.032 | 0.032 | Gamma Adjusted KM-UCL (use when k<=1 and 15 < n < 50 but k<=1) | | |
| | PEST/PCB | 4,4'-DDD | 26/28 | 0.00046 | 0.042 | 0.0085 | 0.015 | 0.015 | 95% Adjusted Gamma UCL | | |
| | PEST/PCB | 4,4'-DDE | 28/28 | 0.0010 | 0.063 | 0.015 | 0.022 | 0.022 | 95% KM Adjusted Gamma UCL | | |
| Sport Fish | Metals | ARSENIC | 10/18 | 0.051 | 0.11 | 0.072 | 0.078 | 0.078 | 95% KM (t) UCL | 9 | 9 |
| | Metals | CHROMIUM | 16/18 | 0.11 | 14 | 2.4 | 5.4 | 5.4 | Gamma Adjusted KM-UCL (use when k<=1 and 15 < n < 50 but k<=1) | | |
| | Metals | LEAD | 8/18 | 0.040 | 0.58 | 0.082 | 0.19 | 0.082 | Arithmetic mean | | |
| | PEST/PCB | AROCLOR-1254 | 18/18 | 0.0029 | 0.027 | 0.0092 | 0.012 | 0.012 | 95% Student's-t UCL | | |
| | PEST/PCB | AROCLOR-1260 | 17/18 | 0.0023 | 0.014 | 0.0058 | 0.0081 | 0.0081 | 95% KM Adjusted Gamma UCL | | |
| | PEST/PCB | 4,4'-DDD | 17/18 | 0.00022 | 0.0045 | 0.00099 | 0.0016 | 0.0016 | 95% Adjusted Gamma UCL | | |
| | PEST/PCB | 4,4'-DDE | 18/18 | 0.00061 | 0.0078 | 0.0027 | 0.0035 | 0.0035 | 95% KM Adjusted Gamma UCL | | |

Notes:

Mean calculated using half the detection limit.

Field duplicates were averaged with their parent sample.

# Tables

**Table 1 Waterbodies Exposure Areas and Receptors**

| Exposure Area | Description | Current Land Use | Zoning | Media | Receptors | Timeframe |
|---|---|---|---|---|---|---|
| SL | Silver Lake | Recreation | Office/Technical Park | Sediment, Surface Water | Adult, Adolescent, and Child Recreator | Current/Future |
| | | | | | Adult, Adolescent, and Child Swimmer | Future |
| BWL | Bridgewood Lake | Recreation | Residential | Soil, Sediment, Surface Water | Adult, Adolescent, and Child Recreator | Current/Future |
| | | | | | Adult, Adolescent, and Child Swimmer | Future |
| HC | Hilliards Creek | Undeveloped, Wildlife Refuge | Residential | Soil, Sediment, Surface Water | Adult, Adolescent, and Child Recreator | Current/Future |
| KWL | Kirkwood Lake | Recreation | Residential | Soil, Sediment, Surface Water | Adult, Adolescent, and Child Recreator | Current/Future |
| | | | | | Adult, Adolescent, and Child Swimmer | Future |
| | | | | Fish | Adult, Adolescent, and Child Angler | Current/Future |

Notes:

BWL – Bridgewood Lake; HC – Hilliards Creek; KWL – Kirkwood Lake; SL – Silver Lake.

Zoning: Hilliards Creek, Silver Lake, Kirkwood Lake, and Bridgewood Lake are not zoned. The zoning refers to land in adjacent areas.

## Table 2 Sample Counts by Media and Exposure Area

**Sample Locations Count**

| Exposure Area | Soil | Sediment | Surface Water | Fish |
|---|---|---|---|---|
| BWL | 55 | 58 | 13 | NA |
| HC | 252 | 122 | 13 | NA |
| KWL | 36 | 112 | 11 | 45 |
| SL | NA | 33 | 16 | NA |

Notes:

NA – Not Applicable (medium not evaluated).

Table presents counts of sample locations used in HHRA.

**Sample Counts**

| Exposure Area | Soil (0-2 ft) | Sediment (0-0.5 ft) | Surface Water | Fish |
|---|---|---|---|---|
| BWL | 57 | 63 | 27 | NA |
| HC | 284 | 122 | 26 | NA |
| KWL | 36 | 135 | 12 | 46 |
| SL | NA | 33 | 19 | NA |

Notes:

NA – Not Applicable (medium not evaluated).

Table presents sample counts used in HHRA.

Field duplicates and their parent samples are counted as one sample.

**Table 3 Surrogate Screening Criteria**

| Analytes with No Screening Criterion | Surrogate Compound Used for Screening Criterion |
|---|---|
| 1,3-Dichlorobenzene | 1,4-Dichlorobenzene |
| 4-Nitrophenol | 2,4-Dinitrophenol |
| Acenaphthylene | Acenaphthene |
| Alpha-Chlordane | Chlordane |
| Benzo(g,h,i)perylene | Pyrene |
| Delta-BHC | Beta-BHC |
| Endosulfan II, Endosulfan Sulfate | Endosulfan |
| Endrin Aldehyde, Endrin Ketone | Endrin |
| Methylcyclohexane | Cyclohexane |
| Phenanthrene | Anthracene |
| Xylenes, m & p | Xylene, m- |
| Aroclor 1248 | Aroclor 1254 |
| Aroclor 1260 | Aroclor 1254 |

**Table 4 Soil Screening Criteria for Compounds with Multiple Forms**

| Analyte | Form Used for Screening Criterion |
|---|---|
| Antimony | Antimony (Metallic) |
| Cadmium | Cadmium (Diet) |
| Chromium | Chromium(VI) |
| Cyanide | Cyanide (CN-) |
| Lead | Lead and Compounds |
| Manganese | Manganese (Non-diet) |
| Mercury | Mercuric Chloride (and Other Mercury Salts) |
| Nickel | Nickel Soluble Salts |
| Thallium | Thallium Soluble Salts |
| Vanadium | Vanadium and Compounds |

**Table 5 Summary of COPCs**

| Group | Analyte | Soil (0-2 ft) | | | Sediment | | | | Surface Water | | | | Fish | Soil/Sediment Screening Criteria (mg/kg) | SW Screening Criteria (mg/L) | Fish Screening Criteria (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | BWL | HC | KWL | SL | BWL | HC | KWL | SL | BWL | HC | KWL | KWL | | | |
| METALS | ALUMINUM | 6 | 108 | 3 | 1 | 42 | 44 | 78 | | 1 | 1 | 1 | | 7700 | 2 | 3210 |
| METALS | ANTIMONY | 2 | 60 | 4 | 1 | 25 | 19 | 15 | | 2 | 4 | 1 | | 3.1 | 0.00078 | 1.28 |
| METALS | ARSENIC | 48 | 263 | 31 | 29 | 62 | 115 | 124 | 2 | 26 | 21 | 12 | 30 | 0.68 | 0.000052 | 0.00576 |
| METALS | BARIUM | | 34 | | | | 13 | | | | 2 | | | 1500 | 0.38 | 642 |
| METALS | CADMIUM | 1 | 12 | | | 38 | 15 | 50 | | 3 | 2 | | | 7.1 | 0.00092 | |
| METALS | CHROMIUM | 54 | 279 | 36 | 33 | 62 | 122 | 135 | 4 | 16 | 15 | 3 | 43 | 0.3 | 0.000035 | 0.0173 |
| METALS | COBALT | 7 | 139 | 1 | 13 | 52 | 67 | 94 | 3 | 6 | 7 | 1 | | 2.3 | 0.0006 | 0.963 |
| METALS | COPPER | | 9 | | 1 | 5 | 11 | 23 | | | 1 | | | 310 | 0.08 | 128 |
| METALS | CYANIDE | 3 | 122 | 1 | 3 | 19 | 57 | 27 | 5 | 5 | 9 | 3 | | 2.3 | 0.00015 | |
| METALS | IRON | 14 | 177 | 15 | 14 | 56 | 85 | 110 | 8 | 15 | 15 | 3 | | 5500 | 1.4 | 2250 |
| METALS | LEAD | 7 | 130 | 5 | 4 | 49 | 72 | 81 | | 7 | 18 | 11 | 18 | 400 | 0.015 | 2 |
| METALS | MANGANESE | | 86 | | 3 | 4 | 6 | 34 | 14 | 14 | 16 | 12 | | 180 | 0.043 | 449 |
| METALS | MERCURY | | 11 | | | | | | | | 1 | | | 2.3 | 0.00057 | 0.321 |
| METALS | NICKEL | | 1 | | | | 1 | 1 | | | | | | 150 | 0.039 | 64.2 |
| METALS | THALLIUM | 8 | 38 | 1 | 3 | | 8 | 9 | | 6 | 1 | 1 | | 0.078 | 0.00002 | |
| METALS | VANADIUM | 1 | 64 | | | 36 | 10 | 26 | | 1 | 1 | | | 39 | 0.0086 | |
| METALS | ZINC | | 2 | | | 3 | 1 | | | | 1 | | | 2300 | 0.6 | 963 |
| PEST/PCB | 4,4'-DDD | | | | | | | | | | | | 1 | 0.19 | 0.0000063 | 0.036 |
| PEST/PCB | 4,4'-DDE | | | | | | | | | | | | 6 | 2 | 0.000046 | 0.0254 |
| PEST/PCB | AROCLOR-1254 | | 5 | | 2 | 4 | 27 | 39 | | | | | 43 | 0.12 | | 0.00432 |
| PEST/PCB | AROCLOR-1260 | | 29 | | | 7 | 10 | 2 | | | | | 37 | 0.12 | | 0.00432 |
| SVOC | BENZO(A)ANTHRACENE | | 41 | | 3 | 4 | 11 | 6 | 3 | | | | | 1.1 | 0.00003 | 0.0864 |
| SVOC | BENZO(A)PYRENE | 2 | 158 | 6 | 16 | 53 | 96 | 75 | 11 | 1 | | | | 0.11 | 0.000025 | |
| SVOC | BENZO(B)FLUORANTHENE | | 58 | | 4 | 15 | 15 | 21 | 2 | | | | | 1.1 | 0.00025 | 0.0864 |
| SVOC | BENZO(K)FLUORANTHENE | | 3 | | 1 | | | | | | | | | 11 | 0.0025 | 0.864 |
| SVOC | BIS(2-ETHYLHEXYL) PHTHALATE | | | | | | | | 1 | | | | | 35 | 0.0056 | |
| SVOC | CHRYSENE | | | | | | | | | | | | | 110 | 0.025 | 8.64 |
| SVOC | DIBENZO(A,H)ANTHRACENE | | 68 | | 4 | 15 | 33 | 23 | 3 | | | | | 0.11 | 0.000025 | |
| SVOC | INDENO(1,2,3-CD)PYRENE | | 34 | | 3 | 2 | 4 | 1 | 1 | | | | | 1.1 | 0.00025 | 0.0864 |
| SVOC | NAPHTHALENE | | 1 | | | 2 | | | | | | | | 3.8 | | |
| VOC | TRICHLOROETHYLENE (TCE) | | | | | 2 | | | | | | | | 0.41 | 0.00028 | |
| TIC | BENZO[J]FLUORANTHENE | | | | 3 | | | | | | | | | 0.42 | | |

Notes:

Table lists the number of samples with exceedances of screening criteria, for compounds that were retained as COPCs.

Analytes that are COPCs in at least one exposure area are presented.

**Table 6 Analytes Eliminated as COPCs Due to Low Detection Frequency**

| Medium (Depth) | Exposure Area | Group | Analyte | Top Depth | Bottom Depth | Station | Date | Result | Qualifier | Screening Criteria | Units | Detection Frequency |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Soil (0-2 ft) | HC | SVOC | ATRAZINE | 0 | 0.5 | HCSB0018 | 6/6/2005 | 4.4 | J | 2.4 | mg/kg | 0.7% |
| | HC | PEST/PCB | AROCLOR-1248 | 0 | 0.5 | HCSB0033 | 6/7/2005 | 0.13 | J | 0.12 | mg/kg | 0.5% |
| Sediment (0-0.5 ft) | KWL | PEST/PCB | AROCLOR-1242 | 0 | 0.5 | KWDD0018 | 10/8/2007 | 0.075 | J | 0.2 | mg/kg | 2% |
| | KWL | PEST/PCB | AROCLOR-1242 | 0 | 0.5 | KWDD0036 | 10/9/2007 | 0.29 | J | 0.2 | mg/kg | |
| | BWL | SVOC | BIS(2-CHLOROETHYL)ETHER | 0 | 0.5 | BWDD0051 | 8/15/2005 | 0.25 | J | 0.23 | mg/kg | 2% |
| Surface Water | BWL | PEST/PCB | ALDRIN | 0.5 | 1 | BWDW0010 | 7/5/2011 | 1.51E-06 | J | 9.20E-07 | mg/L | 4.8% |
| | SL | PEST/PCB | DIELDRIN | 0 | 0.5 | SLDW0015 | 4/28/2010 | 5.20E-06 | J | 1.80E-06 | mg/L | 6% |
| | BWL | PEST/PCB | DIELDRIN | 0.5 | 1 | BWDW0010 | 7/5/2011 | 3.15E-07 | J | 1.80E-06 | mg/L | Not a COPC |
| | BWL | PEST/PCB | HEPTACHLOR | 0.5 | 1 | BWDW0010 | 7/5/2011 | 1.51E-06 | J | 1.40E-06 | mg/L | 4.8% |
| | HC | VOC | CHLOROFORM | 0 | 0.5 | HCDW0010 | 9/13/2005 | 2.00E-03 | J | 2.20E-04 | mg/L | 4% |
| | BWL | SVOC | PENTACHLOROPHENOL | 0 | 0.5 | BSBEDW13 | 11/9/2015 | 0.0000052 | J | 4.10E-05 | mg/L | Not a COPC |
| | BWL | SVOC | PENTACHLOROPHENOL | 0 | 0.5 | BSBEDW14 | 10/29/2015 | 0.0000068 | J | 4.10E-05 | mg/L | |
| | BWL | SVOC | PENTACHLOROPHENOL | 0 | 0.5 | BSBEDW14 | 11/9/2015 | 0.0000061 | J | 4.10E-05 | mg/L | |
| | BWL | SVOC | PENTACHLOROPHENOL | 0 | 0.5 | BSBEDW15 | 10/29/2015 | 0.00003 | J | 4.10E-05 | mg/L | |
| | BWL | SVOC | PENTACHLOROPHENOL | 0 | 0.5 | BSBEDW15 | 11/9/2015 | 0.000011 | J | 4.10E-05 | mg/L | |
| | SL | SVOC | PENTACHLOROPHENOL | 0 | 0.5 | SLDW0016 | 4/28/2010 | 4.70E-05 | J | 4.10E-05 | mg/L | 5% |

**Table 7 TICs Retained as COPCs**

| Analyte | Sediment | | | | Soil (0-2 ft) | Surface Water |
|---|---|---|---|---|---|---|
| | SL | BWL | HC | KWL | All Exposure Areas | All Exposure Areas |
| (TIC) BENZO[J]FLUORANTHENE | 3 | 0 | 0 | 0 | 0 | 0 |

Note:

Table lists the number of samples with exceedances for each TIC.

**Table 8 Adult Lead Model Input Values**

| Term | Definition | Value |
|---|---|---|
| $PbB_0$ | Geometric mean baseline blood lead level (BLL, µg/dL) for adult females (aged 18-45 years) | 0.6 |
| GSD | Geometric standard deviation for adult females | 1.8 |
| EF | Exposure frequency (days/year) | 44 (Recreator, sediment only)<br>150 (Recreator, soil and sediment)<br>105 (Swimmer, sediment)<br>365 (Angler, fish tissue) |
| AT | Averaging time (days) | 150 (Recreator, sediment only)<br>365 (Recreator, soil and sediment)<br>120 (Swimmer, sediment)<br>365 (Angler, fish tissue) |
| PbS or PbF | Soil or fish lead concentration (µg/g) | Area-specific |
| IR | Soil ingestion rate (g/day) | 0.05 (soil)<br>26 (fish) |
| AF | Fraction of ingested lead absorbed into the blood stream (dimensionless) | 0.12 (soil)<br>0.20 (fish) |
| BKSF | Biokinetic slope factor (change in blood lead per µg change in daily lead uptake) (µg/dL per µg/day) | 0.4 |
| $R_{fetal/maternal}$ | Fetal/maternal PbB ratio | 0.9 |

Note:

Source: US EPA (2017c).

**Table 9 IEUBK Model Input Values**

| Parameter | Input Value |
|---|---|
| Air Concentration (µg Pb/$m^3$) | 0.1 (default) |
| Dietary Lead Intake (µg/day) | Model default ranges from 1.95-2.26 |
| Fish Tissue Concentration (µg Pb/g) | 0.11 |
| Drinking Water Consumption (L/day) | Model default ranges from 0.2-0.59 |
| Surface Water Ingestion Rate (L/day) | 0.134 |
| Total Surface Water + Drinking Water Consumption (L/day) | Ranges from 0.33-0.72 |
| Soil and Dust Ingestion Rate (g/day) | Model default ranges from 0.085-0.135 |
| Sediment Ingestion Rate (g/day) | Same as for soil<br>Model default ranges from 0.085-0.135 |
| Drinking Water Concentration (µg Pb/L) | Model default: 4 µg/L |
| Soil Concentration (µg Pb/g) | Exposure area-specific, arithmetic mean |
| Sediment Concentration (µg Pb/g) | Exposure area-specific, arithmetic mean |
| Surface Water Concentration (µg Pb/L) | Exposure area-specific, arithmetic mean |
| Absorption Fraction (%) | Model default: 30% for soil and dust<br>Model default: 50% for diet and water |
| Maternal Blood Concentration (µg Pb/dL) | 0.6 |

**Table 10.1 Summary of Total Cancer Risks and Non-cancer Hazards by Exposure Area – 5% Cr(VI)**

| Exposure Area | Adult Recreator | | Adolescent Recreator | | Child Recreator | |
|---|---|---|---|---|---|---|
| | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard |
| SL | 1E-05 | 0.08 | 1E-05 | 0.1 | 4E-05 | 0.4 |
| BWL | 5E-05 | 0.4 | 3E-05 | 0.7 | 1E-04 | **3** |
| HC | 1E-04 | 1 | 1E-04 | **2** | **4E-04** | **10** |
| KWL | 1E-05 | 0.1 | 7E-06 | 0.2 | 3E-05 | 1 |

| Exposure Area | Adult Swimmer | | Adolescent Swimmer | | Child Swimmer | |
|---|---|---|---|---|---|---|
| | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard |
| SL | 7E-05 | 0.7 | 8E-05 | 0.8 | **2E-04** | **2** |
| BWL | 8E-05 | 0.7 | 6E-05 | 1 | **2E-04** | **5** |
| KWL | 3E-05 | 0.7 | 3E-05 | 1 | 9E-05 | **6** |

| Exposure Area | Adult Angler | | Adolescent Angler | | Child Angler | |
|---|---|---|---|---|---|---|
| | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard |
| KWL | 3E-05 | 1 | 3E-05 | **2** | 5E-05 | **3** |

Notes:

**BOLD** – Cancer Risk >1 x $10^{-4}$ or Hazard Index > 1.

NA – Receptor not evaluated in this exposure area.

**Table 10.2 Summary of Total Cancer Risks and Non-cancer Hazards by Exposure Area – 100% Cr(VI)**

| Exposure Area | Adult Recreator | | Adolescent Recreator | | Child Recreator | |
|---|---|---|---|---|---|---|
| | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard |
| SL | 1E-05 | 0.08 | 1E-05 | 0.1 | 5E-05 | 0.5 |
| BWL | 6E-05 | 0.4 | 5E-05 | 0.7 | **2E-04** | **4** |
| HC | **2E-04** | 1 | **3E-04** | **2** | **2E-03** | **11** |
| KWL | 2E-05 | 0.1 | 2E-05 | 0.2 | 1E-04 | 1 |

| Exposure Area | Adult Swimmer | | Adolescent Swimmer | | Child Swimmer | |
|---|---|---|---|---|---|---|
| | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard |
| SL | 7E-05 | 0.7 | 8E-05 | 0.8 | **2E-04** | **2** |
| BWL | 9E-05 | 0.7 | 8E-05 | 1 | **3E-04** | **5** |
| KWL | 4E-05 | 0.8 | 5E-05 | 1 | **3E-04** | **6** |

| Exposure Area | Adult Angler | | Adolescent Angler | | Child Angler | |
|---|---|---|---|---|---|---|
| | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard | Total Excess Lifetime Cancer Risk | Total Non-cancer Hazard |
| KWL | **3E-04** | **2** | **4E-04** | **2** | **8E-04** | **3** |

Notes:

**BOLD** – Cancer Risk >1 x $10^{-4}$ or Hazard Index > 1.

NA – Receptor not evaluated in this exposure area.

**Table 11 Summary of Lead Risks**

| Exposure Area | Exposed Media | Receptor[1] | Lead EPC (mg/kg) | GM BLL (µg/dL) | Predicted Probability of BLL > 5 µg/dL |
|---|---|---|---|---|---|
| SL | Sediment (0-0.5 ft bgs) | Adult Recreator | 170 | 0.7 | 0.03% |
| SL | Sediment (0-0.5 ft bgs) | Child Recreator[2] | 50 | 1.4 | 0.3% |
| SL | Sediment (0-0.5 ft bgs) | Adult Swimmer | 170 | 1.0 | 0.1% |
| SL | Sediment (0-0.5 ft bgs) | Child Swimmer | 170 | 2.6 | **8%** |
| BWL | Soil (0-2 ft bgs)+Sediment (0-0.5 ft bgs) | Adult Recreator | 623 | 1.2 | 0.5% |
| BWL | Soil (0-2 ft bgs)+Sediment (0-0.5 ft bgs) | Child Recreator | 623 | 6.7 | **73%** |
| BWL | Sediment (0-0.5 ft bgs) | Adult Swimmer | 1,485 | 3.7 | **25%** |
| BWL | Sediment (0-0.5 ft bgs), Surface Water | Child Swimmer[3] | 1,485 | 13 | **98%** |
| HC | Soil (0-2 ft bgs)+Sediment (0-0.5 ft bgs) | Adult Recreator | 4,112 | 4.7 | **38%** |
| HC | Soil (0-2 ft bgs)+Sediment (0-0.5 ft bgs) | Child Recreator | 4,112 | 25 | **99.97%** |
| KWL | Soil (0-2 ft bgs)+Sediment (0-0.5 ft bgs) | Adult Recreator | 510 | 1.1 | 0.3% |
| KWL | Soil (0-2 ft bgs)+Sediment (0-0.5 ft bgs) | Child Recreator | 510 | 5.7 | **61%** |
| KWL | Sediment (0-0.5 ft bgs) | Adult Swimmer | 1,015 | 2.7 | **11%** |
| KWL | Sediment (0-0.5 ft bgs), Surface Water | Child Swimmer[4] | 1,015 | 10 | **93%** |
| KWL | Fish Tissue - Baseline | Adult Angler[5] | N/A | 1.1 | 0.3% |
| KWL | Fish Tissue | Adult Angler | 0.11 | 1.3 | 0.8% |
| KWL | Fish Tissue - Baseline | Child Angler[5] | N/A | 5.7 | **61%** |
| KWL | Fish Tissue | Child Angler | 0.11 | 5.8 | **62%** |

Notes:

BLL – Blood Lead Level; EPC – Exposure Point Concentration; GM – Geometric Mean.

**BOLD** – Predicted probability >5%.

(1) Risks to adolescent receptors are the same as for the adult receptor and therefore are not presented.

(2) For the child Recreator, EPC calculated as (sediment concentration x 44 days/150 days) to account for exposure frequency in the IEUBK model.

(3) The child Swimmer at Bridgewood Lake was assumed to be exposed to a lead EPC of 8.7 µg/L in water, which was calculated as a weighted average of drinking water and surface water concentrations (see Appendix C-1).

(4) The child Swimmer at Kirkwood Lake was assumed to be exposed to a lead EPC of 9.3 µg/L in water, which was calculated as a weighted average of drinking water and surface water concentrations (see Appendix C-1).

(5) The baseline evaluation for the KWL adult and child Anglers assumes exposure to soil and sediment using the weighted EPC of 510 mg/kg.

**Table 12 Lead Risks Using Alternative Soil/Sediment Weighting**

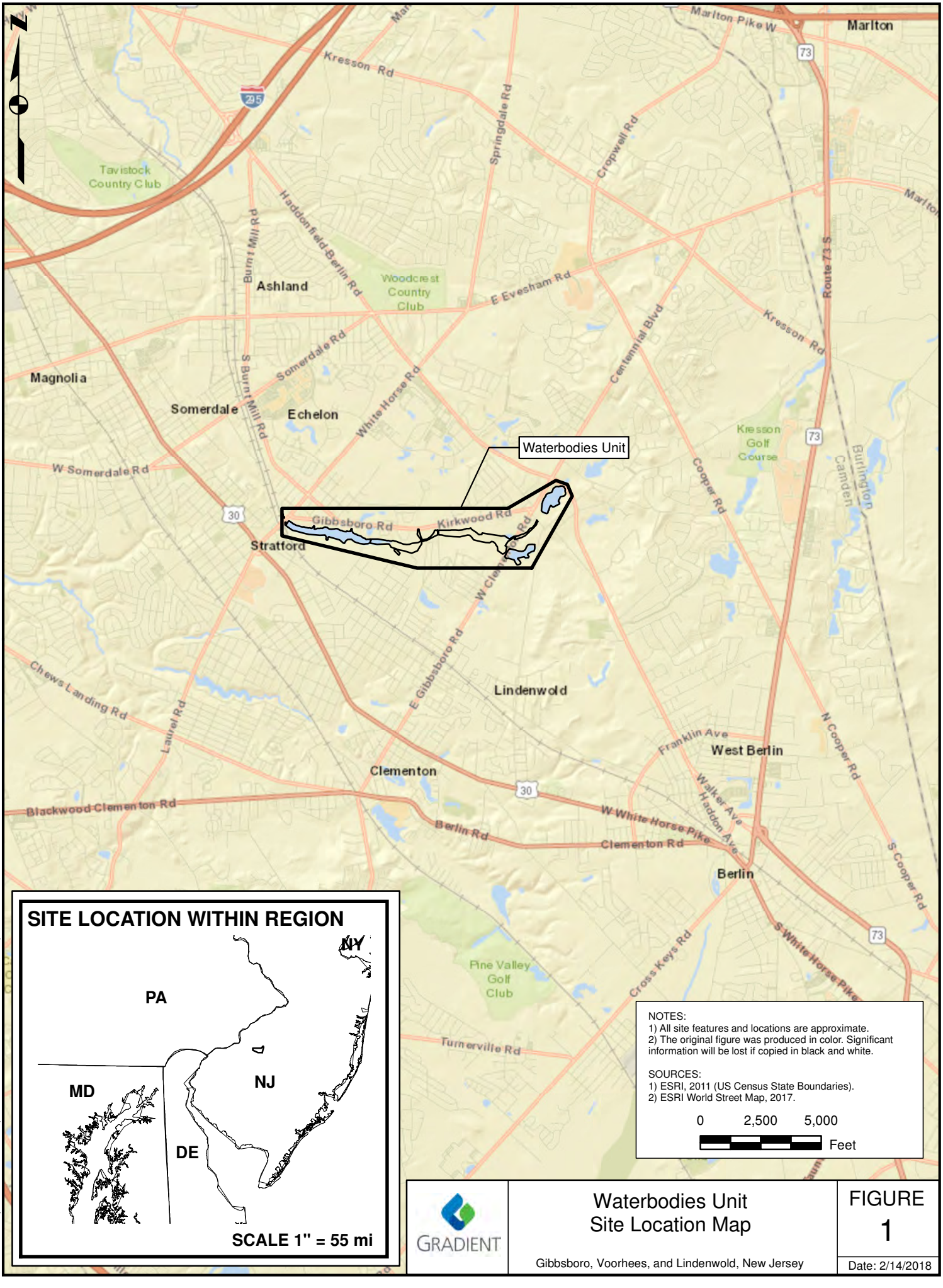
| Exposure Area | Exposed Media | Receptor | Original Analysis | | | Alternative Analysis | | |
|---|---|---|---|---|---|---|---|---|
| | | | Weighted EPC (mg/kg) | GM BLL (µg/dL) | Predicted Probability of BLL > 5 µg/dL | Alternative Weighted EPC (mg/kg) | Alternative GM BLL (µg/dL) | Alternative Predicted Probability of BLL > 5 µg/dL |
| BWL | Soil (0-2 ft bgs) + Sediment (0-0.5 ft bgs) | Adult Recreator | 623 | 1.2 | 0.5% | 378 | 1.0 | 0.2% |
| BWL | Soil (0-2 ft bgs) + Sediment (0-0.5 ft bgs) | Child Recreator | 623 | 6.7 | **73%** | 378 | 4.5 | **42%** |
| HC | Soil (0-2 ft bgs) + Sediment (0-0.5 ft bgs) | Adult Recreator | 4,112 | 4.7 | **38%** | 3,213 | 3.8 | **25%** |
| HC | Soil (0-2 ft bgs) + Sediment (0-0.5 ft bgs) | Child Recreator | 4,112 | 25 | **99.97%** | 3,213 | 22 | **99.91%** |
| KWL | Soil (0-2 ft bgs) + Sediment (0-0.5 ft bgs) | Adult Recreator | 510 | 1.1 | 0.3% | 330 | 0.9 | 0.1% |
| KWL | Soil (0-2 ft bgs) + Sediment (0-0.5 ft bgs) | Child Recreator | 510 | 5.7 | **61%** | 330 | 4.1 | **34%** |
| KWL | Fish, Soil, Sediment | Adult Angler | 510 | 1.3 | 0.8% | 330 | 0.9 | 0.4% |
| KWL | Fish, Soil, Sediment | Child Angler | 510 | 5.8 | **62%** | 330 | 4.1 | **34%** |

Notes:

BLL – Blood Lead Level; EPC – Exposure Point Concentration; GM – Geometric Mean.

**BOLD** – Predicted probability >5%.

# Figures




GRADIENT

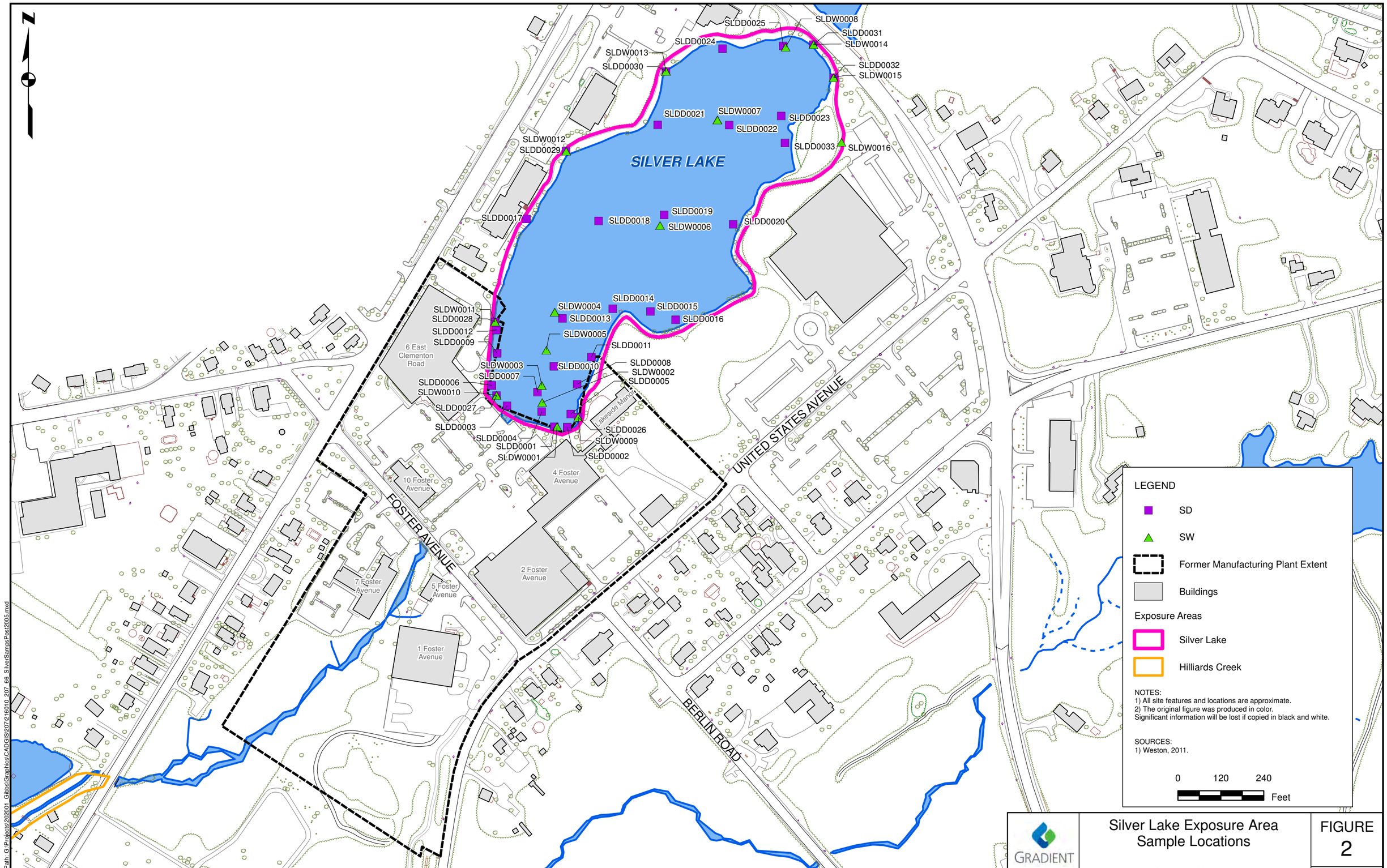
# Waterbodies Unit
# Site Location Map

Gibbsboro, Voorhees, and Lindenwold, New Jersey

FIGURE
1

Date: 2/14/2018

File Path: G:\Projects\202001_Gibbs\Graphics\CADGIS\207\216010_207_65_WB_LocMap.mxd



N
SILVER LAKE
SLDD0025
SLDW0008
SLDD0031
SLDW0014
SLDD0024
SLDW0013
SLDD0030
SLDD0032
SLDW0015
SLDD0021
SLDW0007
SLDD0023
SLDD0022
SLDW0012
SLDD0029
SLDD0033
SLDW0016
SLDD0017
SLDD0018
SLDD0019
SLDW0006
SLDD0020
SLDD0014
SLDW0004
SLDD0015
SLDD0013
SLDD0016
SLDW0011
SLDD0028
SLDD0012
SLDD0009
SLDW0005
SLDD0011
6 East Clementon Road
SLDW0003
SLDD0010
SLDD0008
SLDW0002
SLDD0007
SLDD0005
SLDD0006
SLDW0010
SLDD0027
Lakeside Manor
SLDD0003
SLDD0026
SLDD0004
SLDW0009
SLDD0001
SLDW0001
SLDD0002
10 Foster Avenue
4 Foster Avenue
FOSTER AVENUE
UNITED STATES AVENUE
2 Foster Avenue
7 Foster Avenue
5 Foster Avenue
1 Foster Avenue
BERLIN ROAD
LEGEND
SD
SW
Former Manufacturing Plant Extent
Buildings
Exposure Areas
Silver Lake
Hilliards Creek
NOTES:
1) All site features and locations are approximate.
2) The original figure was produced in color.
Significant information will be lost if copied in black and white.
SOURCES:
1) Weston, 2011.
0
120
240
Feet
GRADIENT
Silver Lake Exposure Area
Sample Locations
Gibbsboro, New Jersey
FIGURE
2
Date: 1/26/2018
File Path: G:\Projects\202001_Gibbs\Graphics\CADGIS\207\216010_207_66_SilverSampsPost2005.mxd

N

WEST CLEMENTON ROAD

Cemetery

Cemetery

White Sand Branch

Honey Run Brook

BRIDGEWOOD LAKE

UNITED STATES AVENUE

Bike Trail

Walking Trail

BWSB0008 BWDD0015 BWDD0016 BWSB0023 BWSB0009 BWSB0024 BWSB0022 BWDD0004 BWDD0060 BWDD0005 BWDW0002 BWDD0006 BWDD0059 BWDW0001 BWDD0007 BWDD0008 BWSB0002 BWDD0001 BWDD0009 BSBEDW13 BWDD0003 BWDD0002 BWSB0001 BWDD0010 BWSB0027 BWSB0025 BWSB0026 BWDD0011 BWSB0003 BWDD0012 BWDD0013 BWDW0003 BWDD0014 BWSB0020 BWSB0052 BWSB0054 BWSB0060 BWSB0053 BWSB0061 BWSB0062

BWDD0017 BWDD0018 BWDD0019 BWDW0004 BWDD0020 BWDD0021 BWDD0022 BWDD0023 BWSB0014 BWSB0013 BWDD0030 BWDD0029 BSBEDW14 BWDD0028 BWDD0027 BWDD0026 BWDW0005 BWDD0025 BWSB0007 BWDD0024

BWSB0017 BWDD0047 BWDD0048 BWSB0038 BWSB0037 BWSB0040 BWSB0039 BWSB0015 BWDD0042 BWSB0036 BWSB0035 BWSB0034 BWSB0033 BWSB0018 BWDD0049 BWSB0016 BWSB0032 BWSB0031 BWDD0043 BWSB0030 BWSB0029 BWDD0044 BWDW0009 BWSB0006 BWSB0028 BWDD0037 BWDD0038 BWDD0045 BWDD0050 BWDD0046 BWSB0049 BWSB0047 BWSB0045 BWSB0046 BWSB0048 BWSB0050 BWDD0039 BWDW0008 BWDD0040 BWDD0034 BWDD0057 BWSB0005 BWSB0004 BWDW0007 BWDD0041 BWSB0061 BWDD0035 BWSB0019 BWDD0031 BWDD0058 BWDW0006 BWDD0032 BWSB0012 BWDD0036 BWDD0033 BWSB0011

BWDD0056 BWDW0010 BWSB0042 BWSB0041 BWSB0057 BWDD0052 BSBEDW15 BWDD0053 BWSB0021 BWDD0051

LEGEND

- SD
- SW
- Soil

Exposure Area

- Bridgewood Lake

NOTES:
1) All site features and locations are approximate.
2) The original figure was produced in color.
Significant information will be lost if copied in black and white.

SOURCE:
1) Weston, 2011.

0 75 150

Feet

File Path: G:\Projects\202001 Gibbs\Graphics\CADGIS\207216010 207 73 BWL SampsPost2005.mxd

GRADIENT

# Bridgewood Lake Exposure Area Sample Locations

Gibbsboro, New Jersey

FIGURE 3

Date: 7/12/2017

KIRKWOOD-GIBBSBORO ROAD

HILLIARDS ROAD

CLEMENTON ROAD

HCDD0025 HCDD0026 HCDD0027 HCDD0028 HCDD0029 HCDW0013 HCSB0079 HCSB0080 HCSB0081 HCSB0082 HCSB0083 HCSB0084 HCSB0085 HCSB0253 HCSB0254 HCDD0087 HCDD0086 HCSB0255 HCSB0256 HCSB0257 HCSB0258 HCSB0252 HCSB0251 HCSB0250 HCSB0248 HCDD0085 HCDD0084 HCDW0012 HCSB0247 HCSB0246 HCDD0083 HCSB0245 HCSB0249 HCSB0072 HCDW0010 HCSB0071 HCSB0244 HCSB0068 HCDD0024 HCDD0023 HCDW0011 HCSB0073 HCDD0022 HCSB0074 HCSB0070 HCSB0069 HCSB0067 HCSB0243 HCSB0241 HCDD0082 HCSB0240 HCDD0081 HCSB0242 HCSB0238 HCSB0237 HCDD0080 HCSB0236 HCDD0079 HCSB0235 RSSB0023 RSSB0024 RSSB0025 RSSB0026 HCSB0239 RSSB0027 RSSB0028 RSSB0029 RSSB0030 HCSB0059 HCSB0058 HCSB0057 HCSB0056 HCSB0055 HCDD0021 HCDW0009 HCDD0019 HCDD0020 HCDD0018 HCDD0017 HCSB0060 HCSB0063 HCSB0061 HCSB0062 HCSB0064 HCSB0065 HCSB0066 HCSB0234 HCSB0230 HCSB0233 HCDD0077 HCSB0232 HCSB0231 HCSB0229 HCSB0228 HCDD0076 HCSB0227 HCSB0226 HCSB0225 HCSB0477 HCSB0480 HCSB0472 HCSB0482 HCDD0092 HCSB0410 HCDD0011 HCSB0428 HCSB0435 HCSB0054 HCSB0374 HCSB0375 HCSB0053 HCSB0051 HCSB0052 HCSB0050 HCSB0049 HCSB0048 HCDD0013 HCSB0047 HCSB0046 HCSB0045 HCSB0044 TRA63A HCDD0014 HCDD0015 HCDD0016 HCDW0008 HCSB0039 HCSB0040 HCSB0041 HCSB0042 HCSB0043 HCSB0446 HCSB0466 HCSB0465 HCSB0458 HCSB0023 HCSB0024 HCSB0026 HCDD0009 HCSB0025 HCSB0002 HCSB0001 HCDD0001 HCDD0002 HCSB0032 HCSB0077 HCSB0078 HCSB0005 HCSB0220 HCSB0004 HCDD0003 HCDD0004 HCSB0003 HCSB0219 HCSB0009 HCSB0010 HCSB0011 HCSB0012 HCDD0005 HCDD0074 HCDW0007 HCSB0013 HCSB0014 HCDW0006 HCDD0010 HCDD0009 HCSB0031 HCSB0276 HCSB0483 HCSB0033 HCSB0029 HCSB0030 HCSB0399 HCSB0484 HCSB0034 HCSB0394 HCSB0485 HCDD0147 HCDD0012 HCSB0035 HCSB0036 HCSB0028 HCSB0390 HCSB0037 HCSB0038 HCSB0398 HCSB0391 HCDD0093 HCSB0416 HCSB0414 RSSB0077 HCSB0413 HCSB0415 HCSB0412 HCSB0419 HCSB0420 HCSB0417 HCSB0418 HCSB0423 HCSB0422 HCSB0421 HCSB0027 HCSB0424 HCSB0022 HCSB0425 HCSB0426 HCSB0021 HCSB0020 HCSB0019 HCSB0018 HCSB0017 HCSB0016 HCDD0006 HCDD0007 HCDD0008 HCSB0008/15 HCSB0007 HCSB0006

LEGEND

- SD
- SW
- Soil
- Buildings
- Parcel Boundary
- Water
- Perennial Stream
- Intermittent Stream

Exposure Area

- Hilliards Creek

NOTES:
1) All site features and locations are approximate.
2) The original figure was produced in color. Significant information will be lost if copied in black and white.

SOURCES:
1) Weston, 2011.
2) Camden County, NJ, 2015.

0 50 100
Feet

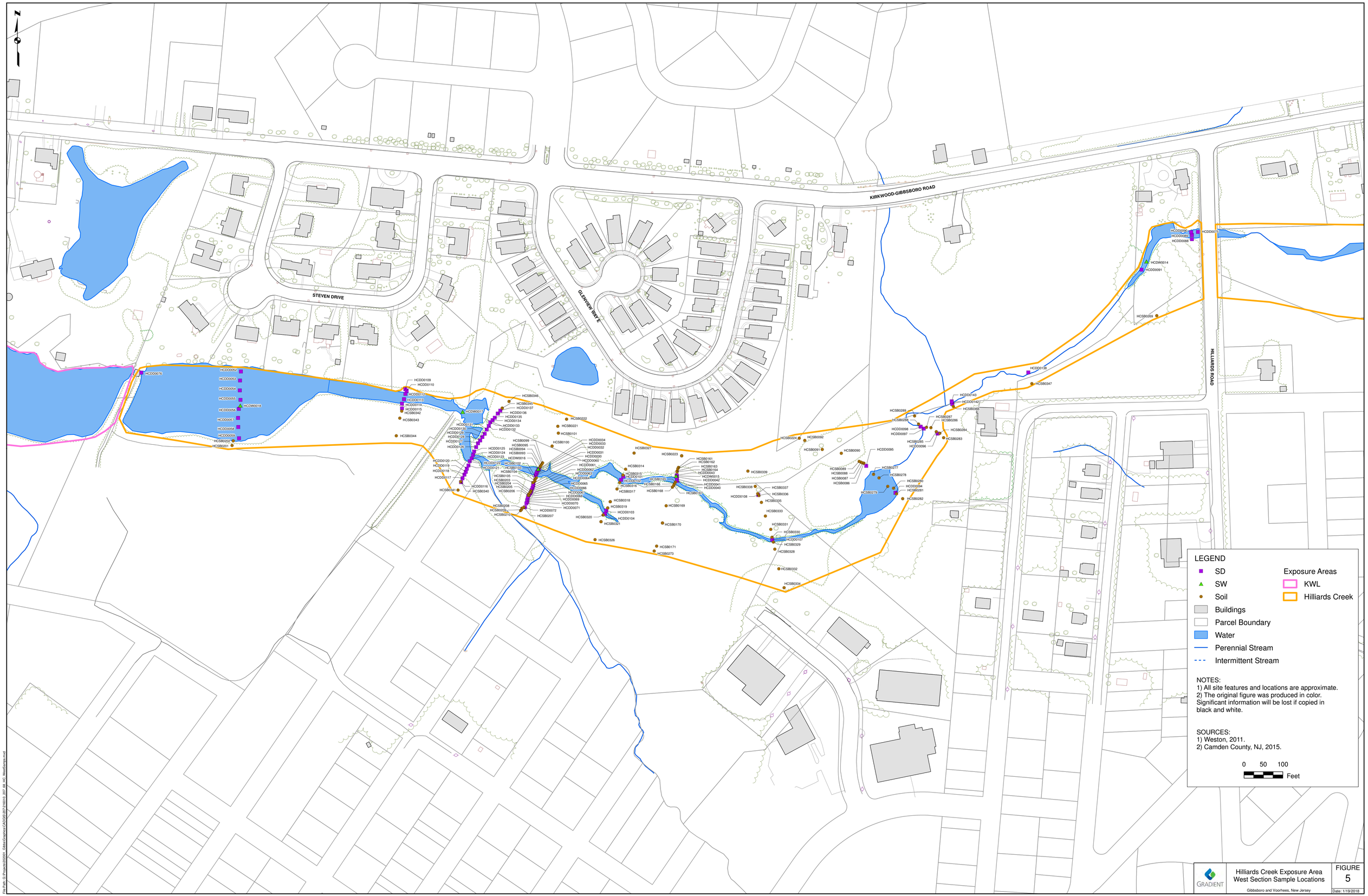
GRADIENT

Hilliards Creek Exposure Area
East Section
Sample Locations
Gibbsboro and Voorhees, New Jersey

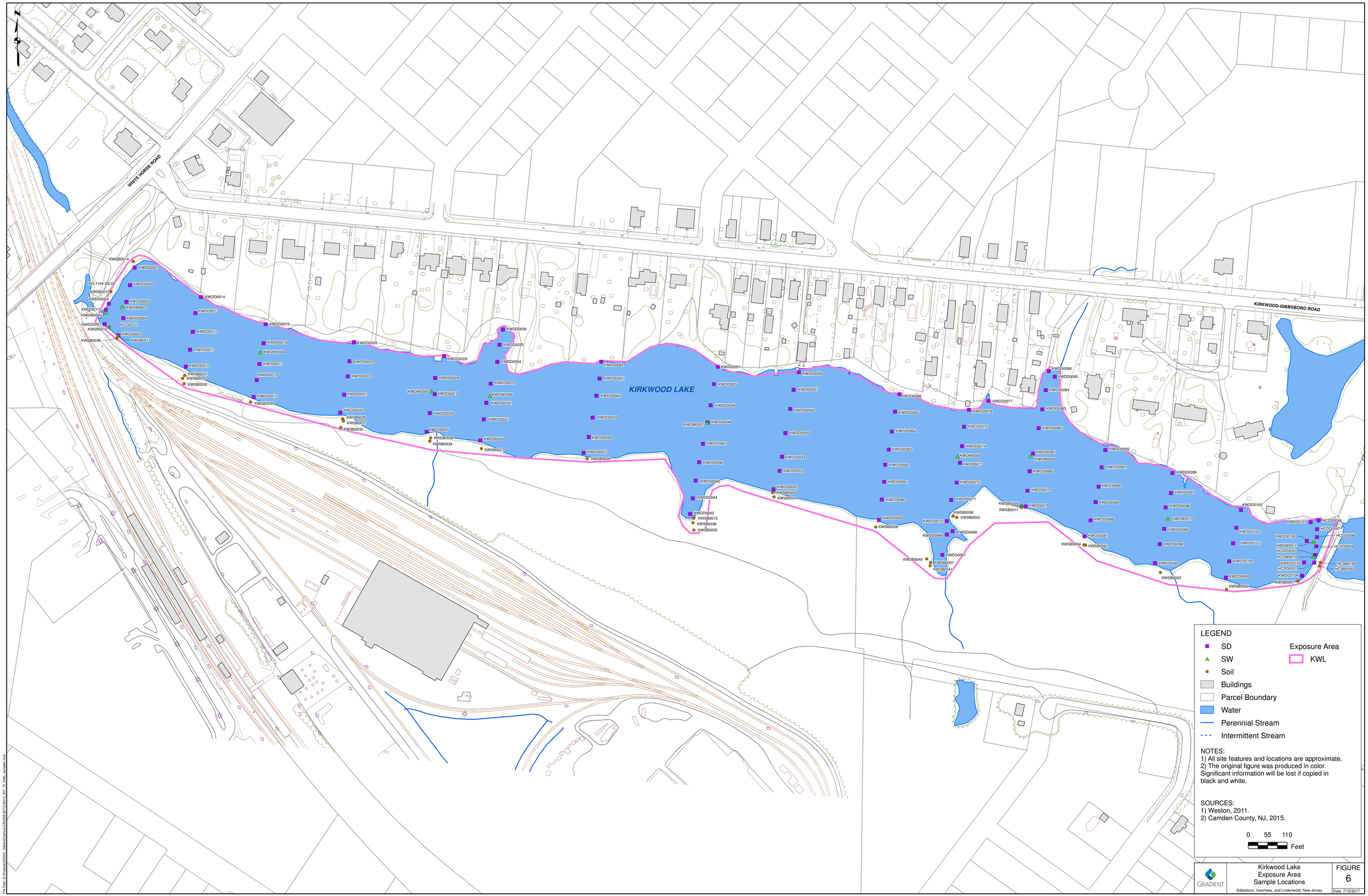
FIGURE 4

Date: 7/12/2017

G:\Projects\30004_Global\Graphics\CAD\GIS\FIG\HillsTB_2017_EF_HC_EastSample.mxd



KIRKWOOD-GIBBSBORO ROAD
STEVEN DRIVE
GLENVIEW WAY E
HILLIARDS ROAD
LEGEND
SD
SW
Soil
Buildings
Parcel Boundary
Water
Perennial Stream
Intermittent Stream
Exposure Areas
KWL
Hilliards Creek
NOTES:
1) All site features and locations are approximate.
2) The original figure was produced in color. Significant information will be lost if copied in black and white.
SOURCES:
1) Weston, 2011.
2) Camden County, NJ, 2015.
0 50 100
Feet
GRADIENT
Hilliards Creek Exposure Area
West Section Sample Locations
Gibbsboro and Voorhees, New Jersey
FIGURE
5
Date: 1/19/2018



WHITE HORSE ROAD
KIRKWOOD-GIBBSBORO ROAD
KIRKWOOD LAKE
LEGEND
SD
SW
Soil
Buildings
Parcel Boundary
Water
Perennial Stream
Intermittent Stream
Exposure Area
KWL
NOTES:
1) All site features and locations are approximate.
2) The original figure was produced in color. Significant information will be lost if copied in black and white.
SOURCES:
1) Weston, 2011.
2) Camden County, NJ, 2015.
0 55 110
Feet
GRADIENT
Kirkwood Lake
Exposure Area
Sample Locations
Gibbsboro, Voorhees, and Lindenwold, New Jersey
FIGURE
6
Date: 7/12/2017

N

SILVER LAKE

OTP

CLEMENTON ROAD

FOSTER AVENUE

UNITED STATES AVENUE

BERLIN ROAD

6 East Clementon Road

Lakeside Manor

10 Foster Avenue

4 Foster Avenue

2 Foster Avenue

7 Foster Avenue

5 Foster Avenue

1 Foster Avenue

LEGEND

Former Manufacturing Plant Extent

Buildings

Zoning

OTP (Office Technical Park)

Exposure

Silver Lake

Hilliards Creek

NOTES:
1) All site features and locations are approximate.
2) The original figure was produced in color.
Significant information will be lost if copied in black and white.

SOURCES:
1) Weston, 2011.
2) Clarke Caton Hintz, 2009.

0 120 240

Feet

GRADIENT

# Silver Lake Zoning Map

Gibbsboro, New Jersey

FIGURE 7

Date: 7/12/2017

File Path: G:\Projects\202001 - Gibbs\Graphics\CADGIS\207216010 -207_60_Silver_ZoningB.mxd

N

R-40

R-15

WEST CLEMENTON ROAD

OR

Cemetery

Cemetery

OTP

UNITED STATES AVENUE

White Sand Branch

Honey Run Brook

BRIDGEWOOD LAKE

PO

RLM

R-40

Bike Trail

Walking Trail

LEGEND

Zoning

- OR (Office Residential)
- OTP (Office Technical Park)
- PO (Professional Office)
- Planned Unit Development Overlay
- R-15 (Residential)
- R-40 (Residential)
- RLM (Residential Low & Moderate)

Exposure Area

- Bridgewood Lake

NOTES:
1) All site features and locations are approximate.
2) The original figure was produced in color. Significant information will be lost if copied in black and white.

SOURCES:
1) Weston, 2011.
2) Clarke Caton Hintz, 2009.

0 75 150

Feet

File Path: G:\Projects\202001_Gibbs\Graphics\CAD\GIS\207216010_207_58_BWL_zoning.mxd

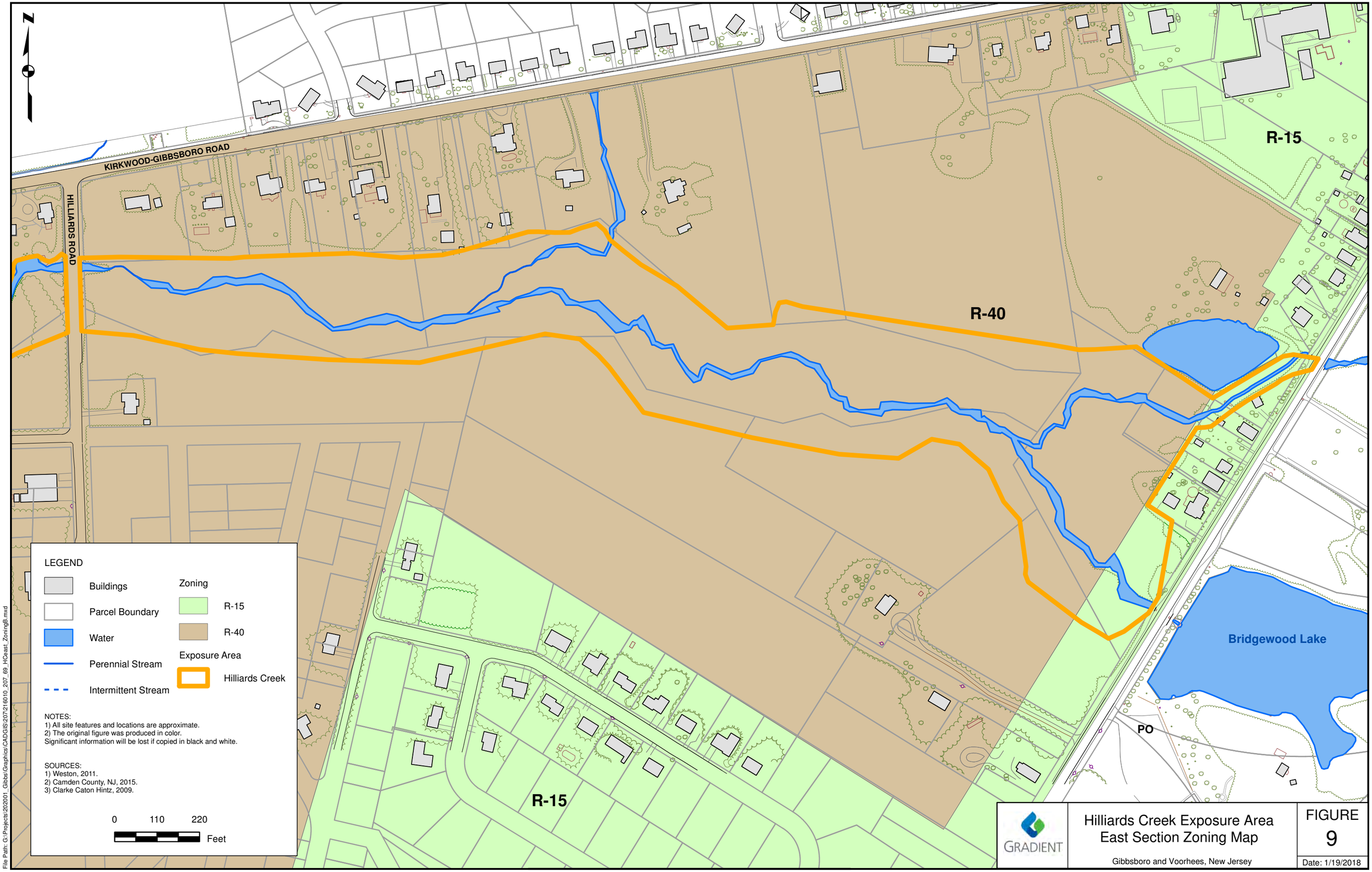
GRADIENT

# Bridgewood Lake Zoning Map

Gibbsboro, New Jersey

FIGURE 8

Date: 2/3/2017


N
KIRKWOOD-GIBBSBORO ROAD
HILLIARDS ROAD
R-15
R-40
R-15
Bridgewood Lake
PO
LEGEND
Buildings
Parcel Boundary
Water
Perennial Stream
Intermittent Stream
Zoning
R-15
R-40
Exposure Area
Hilliards Creek
NOTES:
1) All site features and locations are approximate.
2) The original figure was produced in color.
Significant information will be lost if copied in black and white.
SOURCES:
1) Weston, 2011.
2) Camden County, NJ, 2015.
3) Clarke Caton Hintz, 2009.
0
110
220
Feet
File Path: G:\Projects\202001_Gibbs\Graphics\CADGIS\207216010_207_69_HCeast_ZoningB.mxd
GRADIENT
Hilliards Creek Exposure Area
East Section Zoning Map
Gibbsboro and Voorhees, New Jersey
FIGURE
9
Date: 1/19/2018

N

KIRKWOOD-GIBBSBORO ROAD

STEVEN DRIVE

GLENVIEW WAY E

HILLIARDS ROAD

AR-1

MDR

R-40

R-2

M-1

LEGEND

Buildings

Parcel Boundary

Water

Perennial Stream

Intermittent Stream

Zoning

AR-1 (Age Restricted 1)

M-1 (Industrial)

MDR (Medium Density Residential)

R-2 (Single-Family Detached Residential)

R-40

Exposure Areas

KWL

Hilliards Creek

NOTES:
1) All site features and locations are approximate.
2) The original figure was produced in color. Significant information will be lost if copied in black and white.

SOURCES:
1) Weston, 2011.
2) Camden County, NJ, 2015.
3) Clarke Caton Hintz, 2009.
4) Voorhees, NJ, 2006.
5) Key Engineers, Inc., 1998.

0 110 220

Feet

File Path: G:\Projects\202001_Gibbs\Graphics\CADGIS\207216010_207_70_HOwest_ZoningB.mxd

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Hilliards Creek Exposure Area
West Section Zoning Map

Gibbsboro and Voorhees, New Jersey

FIGURE
10

Date: 1/19/2018

MDR

KIRKWOOD LAKE

1-A

R-2

LEGEND

Buildings

Parcel Boundary

Water

Perennial Stream

Intermittent Stream

Exposure Area

KWL

Zoning

1-A (Light Industrial)

MDR (Medium Density Residential)

R-2 (Single-Family Detached Residential)

NOTES:
1) All site features and locations are approximate.
2) The original figure was produced in color. Significant information will be lost if copied in black and white.

SOURCES:
1) Weston, 2011.
2) Camden County, NJ, 2015.
3) Voorhees, NJ, 2006.
4) Key Engineers, Inc., 1998.

0 110 220

Feet

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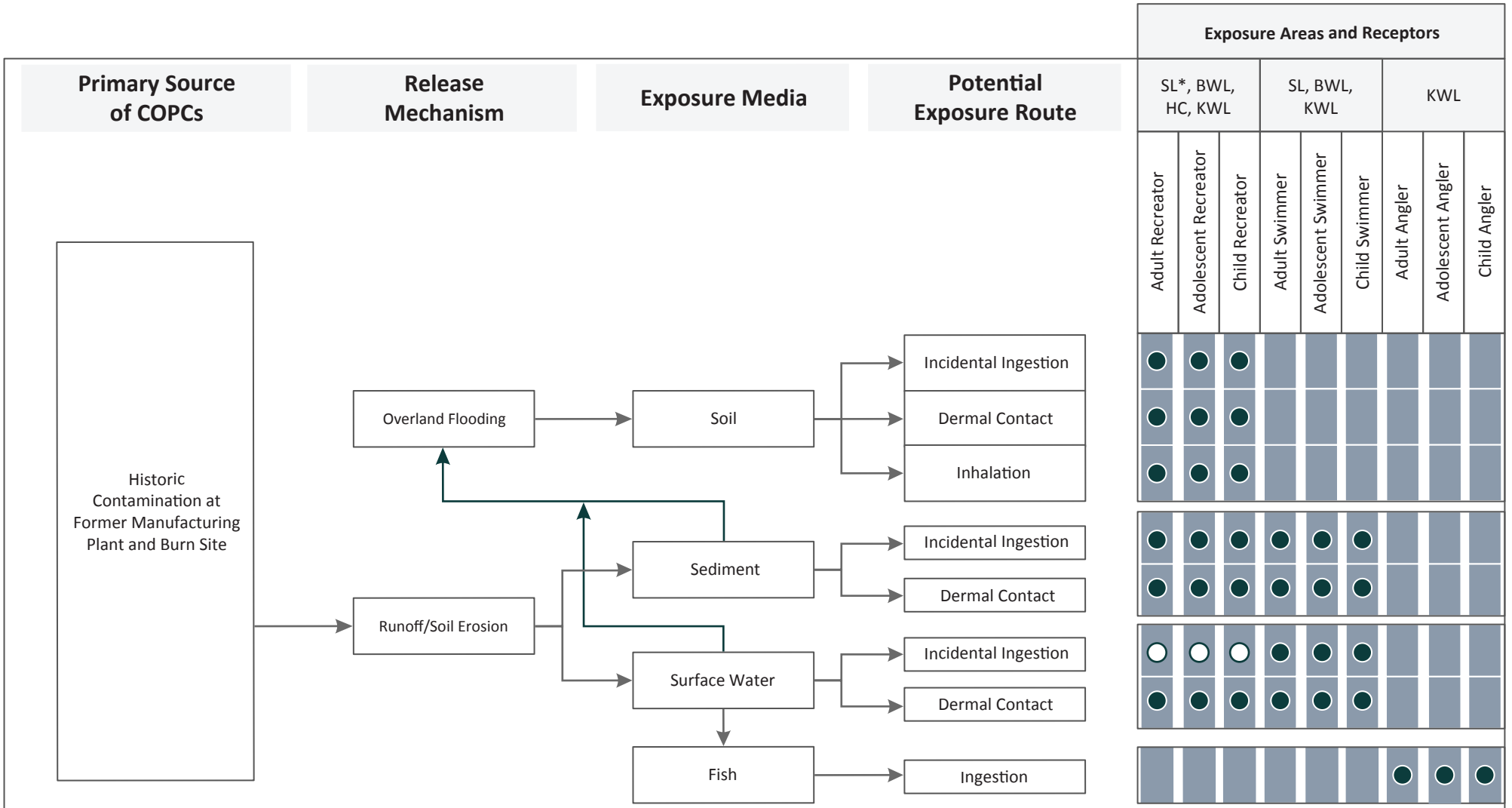
# Kirkwood Lake Zoning Map

Gibbsboro, Voorhees, and Lindenwold, New Jersey

FIGURE 11

Date: 7/12/2017

File Path: G:\Projects\202001_Gibbs\Graphics\CADGIS\207-216010_207_71_KWL_ZoningB.mxd




* Exposure to soil adjacent to the shore of SL was evaluated as part of the FMP HHRA.

COPCs = Chemicals of Potential Concern

Exposure Areas:

BWL = Bridgewood Lake

KWL = Kirkwood Lake

HC = Hilliards Creek

SL = Silver Lake

- Complete and significant
- Complete but insignificant
- Incomplete

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# Conceptual Site Model Waterbodies Unit

Gibbsboro, New Jersey

FIGURE 12

Date: 07/07/2017

File Path: G_Drive\Groups\Graphics\216010\CSM_WaterbodiesOU.ai